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December 19, 2011

Ms. Erin McCarthy  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
6010 Hidden Valley Road, Suite 101  
Carlsbad, California 92011

**RE: 2011 LanEast Solar Energy Project, Quino Checkerspot Butterfly 45-Day  
Summary Report, Boulevard, California**

Dear Ms. McCarthy:

In compliance with the Special Terms and Conditions for Endangered and Threatened Wildlife Species Permit TE-820658-4.6, on behalf of LanEast Solar Farm, LLC, AECOM submits this letter report summarizing the results of focused surveys conducted in 2011 for the federally listed endangered Quino checkerspot butterfly (*Euphydryas editha quino*; Quino) for the LanEast Solar Farm Project (Proposed Project or "Project") in Boulevard, California. AECOM currently holds an Endangered and Threatened Species Permit issued by the U.S. Fish and Wildlife Service (USFWS) under Section 10(a)(1)(A) of the Federal Endangered Species Act. This permit authorizes AECOM to conduct presence/absence surveys for Quino and other species.

**Project Description**

The Proposed Project is a concentrating photovoltaic (CPV) power plant with alternating current (AC) generating capacity of as much as 20.4 megawatts (MW) AC. The Project will consist of up to approximately 900 CPV trackers grouped into approximately 15 building blocks with up to 60 trackers and one pair of 630 to 680-kilowatt (kW) inverters. Each inverter pair is equipped with a small step-up transformer. The AC inverter capacity determines the nameplate capacity of each building block to be 1.26 to 1.36 MW AC; therefore, the total Project capacity is 20.16 to 20.4 MW AC. The Project will be constructed on relatively flat to gently sloping land currently zoned agricultural and used for grazing. The Project site consists of approximately 250 acres and is situated on both sides of McCain Valley Road. It is contiguous to the north side of Old Highway 80 and the south side of Interstate 8. The Project site lies within the unincorporated area of San Diego County just east of Boulevard, California (Figures 1, 2). It will interconnect to San Diego Gas & Electric's (SDG&E) local distribution system at the Boulevard Substation via a dedicated 69-kilovolt (kV) tie-line.

The Project site totals approximately 250 acres. Two portions of the Project site were excluded from the Quino survey area, resulting in approximately 229.26 acres for the Quino survey area. One area excluded was a 0.14-acre cattle pond in the southeast corner that was not suitable for Quino. The other excluded area overlaps with a separate project's study area. This was a corridor (16.79 acres) parallel to and directly north of Old Highway 80 that extends north along McCain Valley Road. Therefore, approximately 229.26 acres of

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potential Quino habitat within the Project site comprised the Quino survey area and was surveyed by AECOM in 2011 (Figure 3).

### **Site Description**

The Quino survey area is located in a desert transition zone dominated by chaparral communities, alkali meadows and seeps, subshrub communities, oak woodlands, and wildflower fields. Elevation within the proposed site ranges from approximately 3,175 to 3,310 feet above mean sea level with gently sloping hillsides and shallow valleys. Rock outcrops and a few small hills are scattered throughout the proposed site. The Quino survey area is located on an active cattle ranch. The vegetation communities found within the Quino survey area are listed below. Vegetation was mapped during field surveys using large-plot aerial photographs at a scale of 1 inch = 200 feet. The Holland (1986) classification system for natural communities as modified by Oberbauer et al. (2008) was used for vegetation mapping. The vegetation communities are described below in order of abundance, starting with the most common community. Following the community name is the Holland (1986) classification number in parentheses (as updated by Oberbauer et al. 2008).

#### Semi-Desert Chaparral (37400)

Semi-desert chaparral is an open-canopy chaparral community dominated by widely spaced evergreen shrub species within a matrix of subshrubs and succulent desert transition species. This community is more open and is not quite as tall as other chaparral types, and is probably dormant in winter (due to cold temperatures) and in late summer and fall (due to drought) (Holland 1986). Dominant species are scrub oak (*Quercus xacutidens*), chamise (*Adenostoma fasciculatum*), holly-leaf cherry (*Prunus illicifolia*), interior flat-topped buckwheat (*Eriogonum fasciculatum* spp. *polifolium*), foothill buckwheat (*Eriogonum wrightii* var. *membranaceum*), and mountain mahogany (*Cercocarpus betuloides*). Common desert transition species include cholla cactus (*Cylindropuntia californica* var. *parkeri*), Mojave yucca (*Yucca schidigera*), ephedra (*Ephedra californica*), and desert apricot (*Prunus fremontii*).

#### Alkali Seep (45320)

Alkali seep as defined in Holland (1986) and Oberbauer et al. (2008) is a wetland vegetation type that supports halophytic plant species such as salt grass (*Distichlis spicata*), salt heliotrope (*Heliotropium curassavicum*), Mexican rush (*Juncus mexicanus*), and alkali sacaton (*Sporobolus airoides*). Within the Quino survey area, this community is consistently dominated by salt grass and salt heliotrope, with presence of the other halophytic species. This community extends throughout the gentle floodplain of Walker Creek, and is subject to extensive cattle and horse grazing.

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#### Freshwater Seep (45400)

Freshwater seep is a persistent wetland dominated by low-growing, perennial plant species. It occurs in permanently moist or wet soil often associated with grasslands or meadows. This vegetation community is dominated by various wetland plant species, including sedges (*Carex* spp.), rushes (*Juncus* spp.), and yerba mansa (*Anemopsis californica*) (Oberbauer et al. 2008).

#### Red Shank Chaparral (37300)

Red shank chaparral is similar to chamise chaparral but is generally taller (6.5 to 13 feet) and usually more open. Red shank (*Adenostoma sparsifolium*) is the dominant species and occupies greater than 50% of the vegetative cover. Chamise, scrub oak, and big sagebrush (*Artemisia tridentata*) often occur as co-dominant species. This community is generally restricted to granitic soils, often at higher elevations with greater precipitation and colder winters. Red shank chaparral occurs in Southern California and is commonly occurring on interior cismontane slopes (Holland 1986). Other associated species often include Mohave yucca, California buckwheat, and foothill buckwheat.

#### Big Sagebrush Scrub (35210)

This community is composed of soft-woody shrubs approximately 6.5 feet tall and is dominated by big sagebrush (*Artemisia tridentata*) with several other associated subshrub and herbaceous species. Big sagebrush scrub can occur on a wide variety of soils and terrain, from rocky well-drained slopes to fine-textured valley soils with a high water table (Holland 1986).

#### Upper Sonoran Subshrub Scrub (39000)

Upper Sonoran subshrub scrub is a low, open scrub community that is dominated by soft-wooded, summer-dormant, drought-tolerant shrubs. Dominant species include interior flat-topped buckwheat, foothill buckwheat, and interior goldenbush (*Ericameria linearifolia*, *Ericameria brachylepis*). Inter-shrub spaces are occupied by many annual species, including sun cup (*Camissonia californica*) and California matchweed (*Gutierrezia californica*) (Holland 1986).

#### Southern Willow Scrub (63320)

Southern willow scrub is a dense, broad-leaved, winter deciduous riparian thicket dominated by several species of willow (*Salix* sp.) in association with mulefat (*Baccharis salicifolia*). Associated species found within this community include mariposa rush (*Juncus dubious*), seep monkey flower (*Mimulus guttatus*), and hoary nettle (*Urtica dioica-holosericea*), among others. This is an early seral community that requires periodic flooding to prevent succession to riparian forest (Holland 1986).

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#### Chamise Chaparral (37200)

Chamise chaparral is dominated by chamise and generally contains lower species diversity than other chaparral communities (Holland 1986). However, several other shrub, subshrub, and herbaceous species are present as co-dominant species on occasion, including scrub oak, interior flat-topped buckwheat, foothill buckwheat, cup-leaf ceanothus (*Ceanothus greggii*), and Mohave yucca.

#### Coast Live Oak Woodland (71160)

Coast live oak woodland varies from an open to dense tree community, with interior coast live oak (*Quercus agrifolia* var. *oxyadenia*) as the dominant overstory species in the habitat on-site. The shrub understory of these communities may include foothill buckwheat (*Eriogonum wrightii* var. *membranaceum*) in the more open phase oak woodland, and black elderberry (*Sambucus nigra* ssp. *caerulea*) and hybrid scrub oak (*Quercus x acutidens*) in the dense phase (Holland 1986).

#### Wildflower Field (42300)

This community is distributed from montane areas to foothills and valleys of the Californian Floristic Province below about 4,000 to 5,000 feet elevation in San Diego County. The distinguishing feature for this community is a dominance of native herbaceous species, often with conspicuous displays of annual wildflowers. Dominance varies from site to site and from year to year (Holland 1986). This community type does not apply to desert regions (too dry) or the north coast of California (too wet). Wildflower field is a sensitive habitat because of its unique character and rare occurrence.

#### Disturbed (11300)

Disturbed areas are those affected by human activities. Vegetation does not usually become reestablished due to frequent disturbances (Holland 1986). Disturbed habitat includes the permanent dirt roads and cleared/graded areas surrounding development.

#### Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense, tall community that is dominated by scrub oak, and, in some areas, Palmer's oak (*Quercus palmeri*), in association with various other chaparral shrub species, including chamise, sugar bush (*Rhus ovata*), silk tassel bush (*Garrya veatchii*), cup-leaf ceanothus (*Ceanothus greggii*), and big-berry Manzanita (*Arctostaphylos glauca*). This community occurs on sites that are more mesic than other chaparrals and on soils that are too shallow or xeric for oak woodland communities (Holland 1986).

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#### Nonnative Grassland (42200)

Nonnative grassland generally occurs on fine-textured loam or clay soils that are moist or even waterlogged during the winter rainy season and very dry during the summer and fall. It is characterized by a dense to sparse cover of annual grasses, often with native and nonnative annual forbs (Holland 1986). Typical grasses within the region are cheat grass (*Bromus tectorum*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), soft chess (*Bromus hordeaceus*), wild oats (*Avena* sp.), and rat-tail fescue (*Vulpia myuros*). Nonnative disturbance-related annuals such as stork's bill, fillaree (*Erodium* sp.), and short-pod mustard (*Hirschfeldia incana*) are common to this community. Although named as a nonnative community, this community often has significant biological value, since it typically supports native grassland species such as tarweeds (*Deinandra* spp.) and California goldfields (*Lasthenia gracilis*), and provides foraging habitat for raptors and often supports other sensitive wildlife species.

#### Unvegetated Channel (64200)

This community consists of unvegetated washes that are dominated by sandy substrate and little to no vegetation (Holland 1986). These channels flood with sufficient frequency to exclude vegetation. However, low cover of flood-adapted herbaceous species can be present. Within the project area, Tecate tarplant (*Deinandra floribunda*), a California Native Plant Society (CNPS) List 1B rare plant species, was present in some areas of the unvegetated washes.

### **Background Information**

Quino was added to the federal endangered species list by USFWS on January 16, 1997 (USFWS 1997). The species (*E. editha*) has a range extending from British Columbia and Alberta, Canada, south through Colorado and Utah, and west along the coast to northern Baja California. It is divided into at least 29 subspecies, each of which has its own range and biological and morphological characteristics. In California, there are at least 18 described subspecies (Emmel 1998). Three other subspecies of *E. editha* are currently known to occur in Southern California. The Quino is the southwesternmost subspecies of *E. editha* (Mattoni et al. 1997).

Quino is known to occur in association with a variety of plant communities, soil types, and elevations (up to 5,000 feet). The plant communities include clay soil meadows, open grasslands, coastal sage scrub, chamise chaparral, red shank chaparral, juniper woodlands, and semi-desert scrub (Ballmer et al. 2001). The Quino is also associated with clay soils that possess cryptogamic crusts and vernal pools (USFWS 2002).

Quino is a medium-sized butterfly (approximately 0.8- to 1.1-inch wingspan) belonging to the family Nymphalidae. The adults are primarily orange-red with white and have black markings on the dorsal wing surface. They are active primarily in March and April. This active period

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may vary depending on weather conditions (Ballmer et al. 2001). The adult butterfly feeds on nectar, which it obtains from spring annuals such as popcorn flower (*Cryptantha* sp.), Layia (*Layia glandulosa*), goldenbush (*Ericameria* sp.), pincushion (*Chaenactis* sp.), fiddleneck (*Amsinckia intermedia*), chia (*Salvia columbariae*), and blue dicks (*Dichelostemma capitatum*), among others. It cannot use flowers that possess deep corolla tubes, such as monkeyflower (*Mimulus* sp.), or those that can be opened by bees, such as snapdragons (USFWS 2002). Adult males and virgin females sometimes “hilltop,” or travel to elevated locations to find mates. While waiting for females to arrive, the males will often exhibit “territorial behavior” and will chase other butterflies that approach them. Frequently, the butterflies are observed in meadows or clearings where their host plants occur (Ballmer et al. 2001).

An adult female may lay 20 to 75 eggs per cluster and may produce up to 1,200 eggs in her lifetime of a couple of weeks. The eggs hatch in approximately 10 days under favorable weather conditions, and the young larvae will immediately begin to feed upon a host plant. The feeding larvae use the dot-seed plantain (*Plantago erecta*), Patagonia plantain (*Plantago patagonica*), white snapdragon (*Antirrhinum coulterianum*), and southern Chinese houses (*Collinsia concolor*) as their host plants (Pratt 2010). Dark-tipped bird’s-beak (*Cordylanthus rigidus*) and purple owl’s clover (*Castilleja exserta*) are considered secondary hosts (USFWS 2002). New evidence suggests that southern Chinese houses is a primary larval food plant for Quino in the 2,953- to 4,265-foot elevation range (Pratt 2010), which is within the range coincident with the Quino survey area.

After feeding and initial growth, the early instar larvae enter an obligatory aestival diapause (dormant stage), which may be broken after fall or winter rains (Murphy and White 1984; Osborne 1998). If adverse weather conditions occur, the emergent larva may reenter a diapause stage repeatedly, for up to 5 or 6 years, until favorable weather conditions permit sufficient growth of the host plant to allow the larva to complete its development. Quino is known to undergo population fluctuations, with extirpation of local populations and recolonization of new areas characteristic of metapopulation dynamics (Osborne 1998).

Quino was once common in Southern California. It ranged north into Ventura County, west to the Pacific Ocean, east to the desert edge, and south into northern Baja California. Currently, it is known to occur only in a few, probably isolated, colonies in southwestern Riverside County, San Diego County, and northern Baja California.

Reasons for the butterfly’s reduction in population are not well understood. Habitat loss due to degradation and fragmentation caused by urban and rural development, agricultural conversion, off-road-vehicular use, the invasion of nonnative plants and insects, fire management practices, overcollecting, and adverse weather conditions have likely contributed to the species’ decline (USFWS 1997).

USFWS recommends that focused Quino surveys be conducted a minimum of five times during the adult flight season by biologists possessing a recovery permit for this species,



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pursuant to Section 10(a)(1)(A) of the Endangered Species Act. The Quino flight season within a given area is determined by the activity of known Quino populations that are monitored annually by USFWS. The Proposed Project is located in eastern San Diego County, and the Jacumba reference site is the closest known population of Quino; therefore, surveys coincided with Quino activity at the Jacumba reference site. During the 2011 flight season, the first adult Quinos were observed flying on March 15, 2011, at the Jacumba reference site, which is approximately 3 miles to the southeast (USFWS 2011).

### **Survey Methodology**

#### **Habitat Assessment**

In accordance with the *Quino Checkerspot Butterfly (Euphydryas editha quino) Survey Protocol Information* (USFWS 2002), a habitat assessment of the entire Quino survey area was conducted on March 25, 2011, prior to the first protocol-level survey by permitted biologists (Table 1). Protocol-level surveys of the Quino survey area were determined necessary due to the presence of suitable Quino habitat. The Quino survey area occurs within the USFWS Quino recommended survey area (USFWS 2005). Potential habitat surveyed for the Quino consisted of all habitat except for open water (cattle ponds) and developed areas. Results of habitat assessments defined all potentially suitable habitats as the Quino survey area (Figure 3). All closed-canopy chaparral, riparian forest, and oak woodland habitats were included in the Quino survey area because these areas were small and contained open patches with the potential to support Quino.

**Table 1**  
**Permitted Biologists Who Conducted**  
**Quino Habitat Assessments**

<b>AECOM Permitted Biologists:</b>
Erin Bergman
Andrew Fisher
Mike Couffer
<b>Subcontracted Permitted Biologists:</b>
Antonette Gutierrez
Steve Rink
Adam Behle

#### **Focused Adult Quino Surveys**

The start date for focused adult Quino surveys was determined based on conditions at the Jacumba reference site monitored by USFWS (USFWS 2011). The Jacumba reference site population of Quino uses dotseed plantain as a host plant (USFWS 2011). This plant species, widespread on clay soils in western San Diego County, is restricted to basalt-derived clay soils in the vicinity of Jacumba Mountain, and is not present in the Quino survey

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area. The Jacumba reference site is closer to the desert at a slightly lower elevation than the Quino survey area. Due to higher elevations, the presence of granitic soils, the lack of clay soils, and the absence of dotseed plantain in the Quino survey area, any Quino population existing on-site would be expected to exhibit ecology similar to other “high” elevation Quino populations in the vicinity, which are typically associated with southern Chinese houses, white snapdragon, and dark-tipped bird’s beak host plants. Quino populations in higher elevations tend to fly slightly later in the season than those populations in slightly lower elevations. Based on AECOM biologists’ experience with Quino at a similar elevation (AECOM 2010), it is expected that any potential Quino population in the vicinity of the Quino survey area will have its flight season beginning 1 or 2 weeks later than the population at Jacumba.

The first adult Quino observed at the Jacumba reference site was detected on March 15, 2011 (USFWS 2011); however, due to out-of-protocol weather for most of March (mean daytime temperatures were lower than protocol survey guideline temperatures), surveys were not initiated until March 30, 2011. Focused presence/absence Quino surveys within the Quino survey area occurred March 30 to May 4, 2011. Surveys were conducted by permitted AECOM biologists Erin Bergman and Bonnie Hendricks under permit number TE-820658-4, and additional AECOM biologists with valid 10(a)(1)(A) permits. Table 2 provides a list of all biologists who conducted surveys and their permit numbers.

**Table 2**  
**Survey Personnel and Permit Numbers**

<b>Biologist</b>	<b>#TE Permit Number</b>
Erin Bergman	820658-4
Michael Couffer	782703-8
Bonnie Hendricks	820658-4
Margaret Mulligan	233291-0
Ken Osborne	837760-6

Surveys were conducted during optimal periods for detecting Quino, when wind, temperature, and other weather conditions were most favorable. If weather conditions did not meet the USFWS protocol for Quino, biologists waited for the weather conditions to improve before proceeding with surveys. Surveys were terminated if sustained winds were more than 15 miles per hour. The survey routes of each permitted biologist were recorded and mapped electronically using Garmin Global Positioning System (GPS) units. Biologists walked meandering transects through all potentially suitable habitat, scanning the ground, surrounding bushes, and all nectar sources for Quino. Biologists documented any potential Quino host plant populations, all species of flowering plants (potential nectar sources), and all species of butterflies observed. Potential Quino host plants were mapped and recorded in increments of 1–10, 11–50, 51–100, 101–500, and 500+ individual plants (Figure 3).



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The Quino survey area was surveyed initially every week for 5 weeks, which is the recommended minimum duration for focused Quino presence/absence surveys in the current USFWS species survey protocol (USFWS 2002). Surveys were extended an additional week within selected portions of the Quino survey area because potential Quino host plants (dark-tipped bird's beak) were present in these areas or nectar resources remained abundant. Although protocol was satisfied with the 5 weeks of survey, in the interest of survey rigor, AECOM biologists decided to continue with a 6th week of survey within portions of the Quino survey area considered to have the greatest (if any) potential to support Quino. Portions of the Quino survey area were excluded for this additional survey effort based on the following factors: increased evidence of heavy cattle grazing, a lack of host plant populations, and sparse nectaring resources. Therefore, approximately 118.68 acres within the Quino survey area were surveyed during survey week 6 (Figure 3).

According to USFWS guidelines, habitat with active/in-use grazing and a lack of native vegetation can be excluded from protocol-level surveys. Evidence of cattle grazing was present during weeks 1 through 5, but these areas were still surveyed for 5 weeks given the presence of native vegetation in spite of active grazing. Table 3 shows the survey week, date, survey team, total number of survey days, and the number of permitted biologist survey days per week.

**Table 3**  
**Protocol Quino Survey Schedule**

Survey Week	Date	Permitted Biologist Survey Team	# Calendar Days	# Person Days <sup>A</sup>
1	03/30/11 – 03/31/11	Margaret Mulligan, Ken Osborne	2	3
2	04/04/11 – 04/05/11	Mike Couffer, Ken Osborne, Erin Bergman	2	3
3	04/13/11 – 04/15/11	Erin Bergman, Mike Couffer	3	4
4	04/18/11 – 04/20/11	Mike Couffer, Ken Osborne	3	3
5	04/26/11 – 04/28/11	Ken Osborne, Mike Couffer	3	4
6	05/02/11 – 05/04/11	Erin Bergman, Bonnie Hendricks, Margaret Mulligan	3	5

<sup>A</sup> The number of person days varied depending on weather conditions; some person days reflected here are partial days. This number only includes permitted biologists.

## Results

No Quino were detected during the habitat assessment or the focused adult Quino surveys. The five most abundant butterflies found in the Quino survey area in order of abundance were Behr's metalmark (*Apodemia mormo*), common buckeye (*Junonia coenia*), Acmon blue (*Icaria acmon*), sandhill skipper (*Polites sabuleti*), and desert pearly marble (*Euchloe hyantis*). A total of 46 different butterfly and various moth species were detected within the Quino survey area, with numbers varying across survey weeks. The total abundance of

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butterfly species varied across the six surveys, but was highest during survey weeks 3 through 6.

Generally, potential nectar sources increased in diversity and abundance during survey weeks 3 through 6. A summary of weekly butterfly and moth species observations is included in Appendix A. Survey-specific weather conditions and personnel are presented in Appendix B. Field data collected during protocol surveys is included in Appendix C. A list of potential nectaring sources and host plants detected during each survey week is presented in Appendix D. A list of vertebrate wildlife species detected during Quino surveys is presented in Appendix E.

The Quino survey area within the Project site was initially part of a larger survey area that was separated into three separate CPV projects (LanWest Solar Farm, LanEast Solar Farm, and Rugged Solar Farm) after the completion of habitat assessments and Quino surveys. LanWest Solar Farm is located adjacent to the Proposed Project (on the western boundary of LanEast) and includes habitat approximately 0.5 mile west of McCain Valley Road immediately south of Interstate 8 and north of Old Highway 80. Rugged Solar Farm includes land north of Interstate 8 and on both sides of McCain Valley Road. All three project sites were surveyed at the same time for Quino (while the sites were considered one large project). Therefore, and to provide additional data, some of the appendices include combined data from the now three differentiated projects. Appendix A is identical for both LanWest and LanEast, Appendix B is identical for LanWest and LanEast, Appendix C is identical for LanWest and LanEast, Appendix D is identical for all three project sites, and Appendix E is identical for LanWest and LanEast.

During spring 2011, rare plant surveys were ongoing, concurrent with focused Quino surveys for the project. Botanists Bonnie Hendricks, Erin Bergman, Fred Sproul, Kyle Harper, Lance Woolley, Margaret Mulligan, John Messina, and Kyle Ince conducted rare plant surveys across 100% of the survey area. Botanists mapped all potential Quino larval host plants observed while completing rare plant surveys. All host plants that were detected within the survey area, including observations made by Quino surveyors during protocol surveys and by botanists during rare plant surveys within the same time frame as the Quino protocol surveys, are provided in Figure 3.

The only potential Quino host plant detected within the Quino survey area was a small population (approximately 10 individual plants) of dark-tip bird's beak (Figure 3). The species was present only as small basal rosettes and/or diminutive, immature plants in April. Dark-tip bird's beak was not expected to fully mature and bloom until July.

## **Discussion**

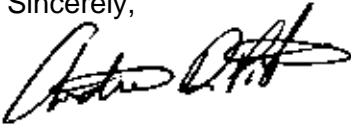
No Quino were found within the Quino survey area. Although one small population of dark-tip bird's beak was found in the Quino survey area (Figure 3), the low abundance and late emergence of this species and the absence of dotseed plantain, Coulter's snapdragon, and

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southern Chinese houses substantially diminish the potential of host resources to support a Quino population on the site. Due to above-average rainfall during the 2010/2011 wet season, host plant population growth, as exhibited at several other locations in the general vicinity of the Quino survey area, was not limited by rainfall (NOAA 2011). Given the ample winter precipitation, abundant wildflowers, springtime butterflies and moths, well coordinated timing of the survey relative to activity of local Quino populations, and extensive experience of survey biologists, AECOM is confident that our negative survey results for Quino are valid on all portions of the Quino survey area.

If you have any questions or comments regarding this letter report, please contact me at (619) 233-1454.

Sincerely,



Andrew Fisher  
Wildlife Biologist

Attachments:    Figure 1 –    Regional Map  
                     Figure 2 –    Vicinity Map  
                     Figure 3 –    Quino Habitat Assessment and Larval Host Plants Map  
                     Appendix A – Summary of Weekly Butterfly and Moth Species  
   Observations During Quino Surveys  
                     Appendix B – Daily Weather Conditions During Quino Surveys  
                     Appendix C – Field Data Collected During Quino Surveys  
                     Appendix D – Potential Nectaring Sources and Host Plants Detected During  
   Quino Surveys  
                     Appendix E – Vertebrate Wildlife Species Detected During Quino Surveys

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**Certification**

Qualified biologists who conducted Quino checkerspot butterfly surveys within the Quino survey area for the proposed LanEast Solar Farm Project certify that the information in this survey report fully and accurately represents the work performed. Signatures of permitted biologists (as listed in Table 1) who conducted protocol surveys (March 30, 2011 through May 4, 2011) are included below. The results of focused surveys for listed species are typically considered valid for 1 year by the resource agencies.



Erin Bergman  
AECOM Biologist



Mike Couffer  
AECOM Biologist



Bonnie Hendricks  
AECOM Biologist



Margaret Mulligan  
AECOM Biologist



Ken Osborne  
AECOM Biologist

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## Literature Cited

- AECOM. 2010. 45-Day Summary Report of Focused Surveys for the Quino Checkerspot Butterfly for the Campo Wind Energy Project.
- Ballmer, G. R., D. C. Hawks, K. H. Osborne, and G. F. Pratt. 2001. The Quino Checkerspot Butterfly (*Euphydryas editha quino*). Year 2000 Quino Workshop.
- Emmel, T. C. 1998. *Systematics of Western North American Butterflies*. Mariposa Press, Gainesville, Florida, 878 pp.
- Holland, R. F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency.
- Mattoni, R., G. F. Pratt, T. R. Longcore, J. F. Emmel, and J. N. George. 1997. The Endangered Quino Checkerspot Butterfly, *Euphydryas editha quino* (Lepidoptera: Nymphalidae). *J. Res. Lepid.* 34:99–118.
- Murphy, D. D., and R. R. White. 1984. Rainfall, Resources, and Dispersal in Southern Populations of *Euphydryas Editha* (Lepidoptera: Nymphalidae). *Pan-Pac Entomol.* 60:350–354.
- National Oceanic and Atmospheric Administration (NOAA). 2011. National Weather Forecast Office, San Diego, California. Observed Weather Report for Campo. Available at <http://www.nws.noaa.gov/climate/index.php?wfo=sgx>.
- Oberbauer, T., M. Kelly, and J. Buegge. 2008. Draft Vegetation Communities of San Diego County. Based on Preliminary Descriptions of the Terrestrial Natural Communities of California by Robert F. Holland, October 1986.
- Osborne, K. H. 1998. Microhabitat Conditions Associated with the Distribution of Post-Diapause Larvae of *Euphydryas Editha* Quino and its Host, *Plantago Erecta* (Chapter 4). In: A Description of Arthropod Community Structure in Southern Californian Coastal Sage Scrub (Chapter 4). Master's thesis, University of California, Riverside, California.
- Osborne, K. H. 2011. Email communication on April 4, 2011, regarding Jacumba reference site visit findings, posted on the USFWS Monitoring Information website ([http://www.fws.gov/carlsbad/TEspecies/Documents/QuinoDocs/QuinoMonRef/Quino\\_Ref\\_Info.htm](http://www.fws.gov/carlsbad/TEspecies/Documents/QuinoDocs/QuinoMonRef/Quino_Ref_Info.htm)).
- Pratt, G. F. 2010. A New Larval Food Plant, *Collinsia concolor*, for the Endangered Quino Checkerspot, *Euphydryas editha quino*. *Journal of the Lepidopterists' Society* 64(1):36–37.

Ms. Erin McCarthy  
Recovery Permit Coordinator  
Carlsbad Fish and Wildlife Office  
December 19, 2011  
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U.S. Fish and Wildlife Service (USFWS). 1997. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Laguna Mountains Skipper and Quino Checkerspot Butterfly. *Federal Register* 58:16742–16757.

U.S. Fish and Wildlife Service (USFWS). 2002. Survey Protocol for the Endangered Quino Checkerspot Butterfly (*Euphydryas editha quino*) for the Year 2002 Field Season. February. 6 pp. + appendices.

U.S. Fish and Wildlife Service (USFWS). 2005. Year 2005 Quino Survey Areas. Available at <http://www.fws.gov/carlsbad/TEspecies/Documents/QuinoDocs/web-map20052.pdf>.

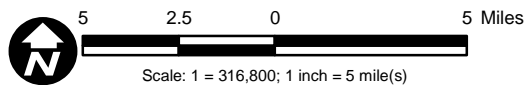
U.S. Fish and Wildlife Service (USFWS). 2011. Carlsbad Fish and Wildlife Office. Quino Checkerspot Butterfly 2011 Monitoring Information. Last updated April 6, 2011. Available at [http://www.fws.gov/carlsbad/TEspecies/Documents/QuinoDocs/QuinoMonRef/Quino\\_Ref\\_Info.htm#Table\\_1](http://www.fws.gov/carlsbad/TEspecies/Documents/QuinoDocs/QuinoMonRef/Quino_Ref_Info.htm#Table_1).



## FIGURES

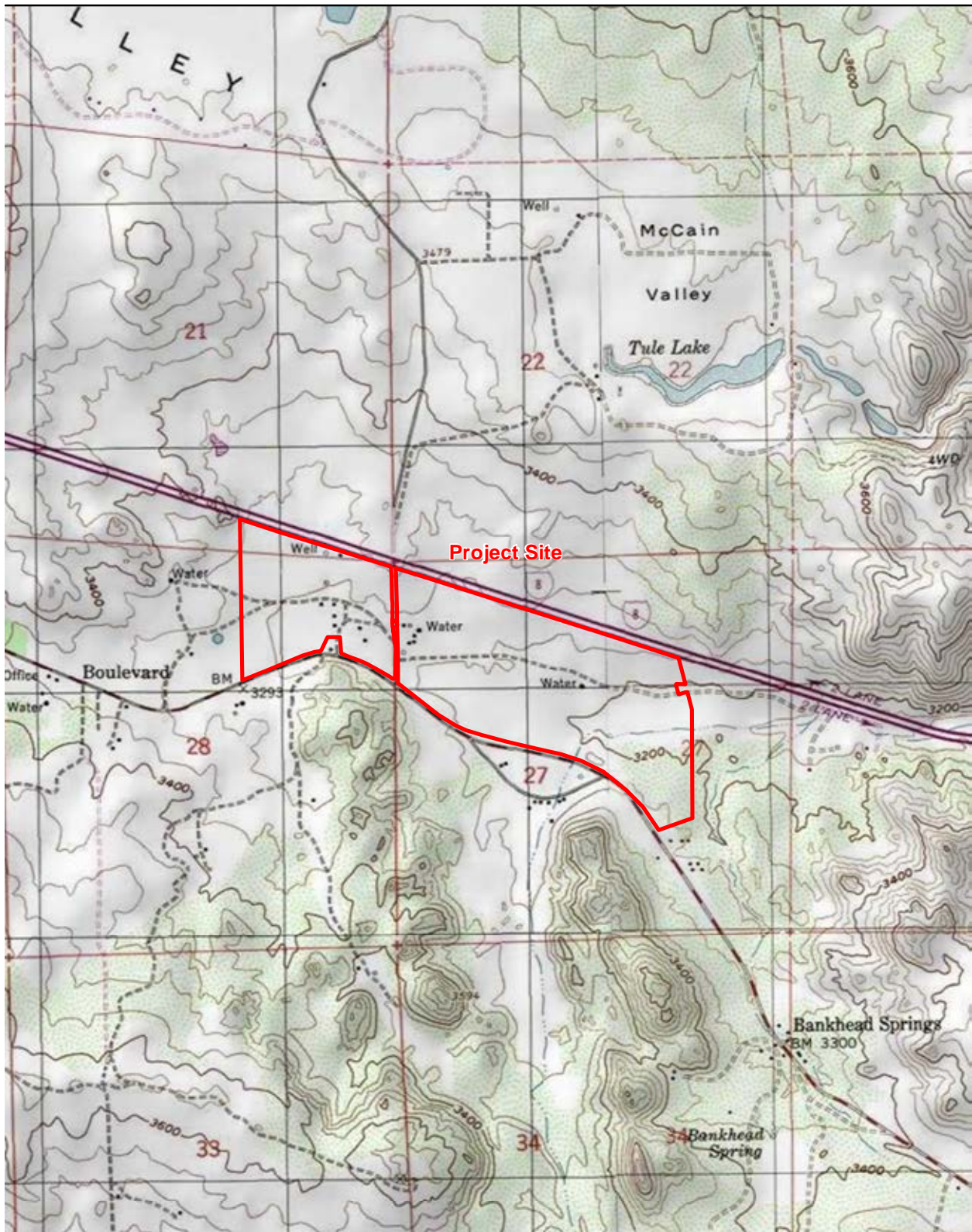


Source: Soitec 2011; AECOM 2011; ESRI 2011



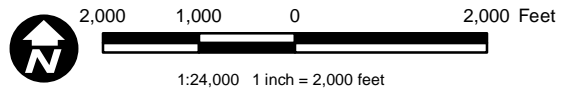
**Figure 1**  
**Regional Map**





Source: Soitec; ESRI; AECOM 2011

Live Oak Springs and Jacumba USGS Quadrangles, San Diego County



**Figure 2**  
**Vicinity Map**

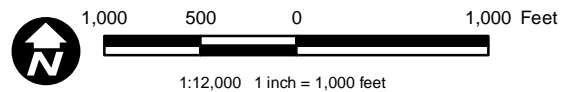
2011 LanEast Solar Energy Project Quino Checkerspot Butterfly 45-Day Report

Path: P:\2011\11280175.01\_Concentrix\_S\06GIS\6.3\_Layout\QCB\_45DayReport\LAN\_East\VicinityMap.mxd, 11/29/2011, johnsonaa





Source: Soitec; ESRI; AECOM 2011



**Figure 3**  
**Quino Habitat Assessment and**  
**Larval Host Plants Map**

2011 LanEast Solar Energy Project Quino Checkerspot Butterfly 45-Day Report

Path: P:\2011\11280175.01\_Concentrix\_S\06GIS\6.3\_Layout\QCB\_45DayReport\LAN\_East\QCBMap.mxd, 11/29/2011, johnsonaa

**APPENDIX A**  
**SUMMARY OF WEEKLY BUTTERFLY AND**  
**MOTH SPECIES OBSERVATIONS**  
**DURING QUINO SURVEYS**

**Appendix A**  
**Summary of Weekly Butterfly and Moth Species Observations**  
**During Quino Surveys<sup>A</sup>**

	Survey Week 1	Survey Week 2	Survey Week 3	Survey Week 4	Survey Week 5	Survey Week 6	TOTAL
<b>Nymphalidae (Brushfooted Butterflies)</b>							
<i>Euphydryas chalcedona</i> (Henne's checkerspot)	0	2	0	0	3	0	5
<i>Chlosyne gabbii</i> (Gabb's checkerspot)	0	0	0	0	1	0	1
Checkerspot sp.	0	0	0	1	0	0	1
<i>Junonia coenia</i> (common buckeye)	0	6	15	16	38	23	98
<i>Vanessa annabella</i> (west coast lady)	0	1	0	0	0	0	1
<i>Vanessa atalanta</i> (red admiral)	0	0	0	0	1	0	1
<i>Vanessa cardui</i> (painted lady)	3	1	0	0	1	0	5
<i>Vanessa</i> sp. (lady sp.)	0	2	2	2	0	0	6
<b>Pieridae (Whites, Sulphurs)</b>							
<i>Pontia sisymbrii</i> (spring white)	0	0	0	1	0	0	1
<i>Pontia protodice</i> (common white)	0	7	2	1	7	3	20
<i>Anthocharis sara</i> (Sara orangetip)	10	20	1	0	1	3	35
<i>Euchloe hyantis</i> (desert pearly marble)	19	11	10	0	1	0	41
<i>Colias eurytheme</i> (orange sulphur)	5	6	0	1	6	4	22
<i>Colias harfordii</i> (Harford's sulphur)	1	8	1	1	7	10	28
<i>Colias philodice</i> (clouded sulphur)	0	2	0	0	0	0	2
<i>Nathalis iole</i> (dainty sulphur)	3	4	0	0	1	0	8
<b>Papilionidae (Swallowtails)</b>							
<i>Papilio eurymedon</i> (pale swallowtail)	0	0	0	0	2	1	3
<b>Riodiniade (Metalmarks)</b>							
<i>Apodemia mormo</i> (Behr's metalmark)	151	189	211	137	338	25	1,051
<b>Lycaenidae (Hairstreaks and Blues)</b>							
<i>Celastrina ladon</i> (spring azure)	0	0	0	1	0	0	1
<i>Brephidium exile</i> (western pygmy blue )	0	4	0	0	1	0	5
<i>Glaucopsyche lygdamus</i> (southern blue/silvery blue)	0	0	0	0	2	0	2
<i>Icaria acmon</i> (acmon blue)	10	12	14	6	21	14	77
<i>Philotes sonorensis</i> (sonoran blue)	0	5	1	0	0	0	6
<i>Everes amyntula</i> (western-tailed blue)	1	2	0	0	1	0	4
<i>Callophrys augustinus</i> (brown elfin)	2	0	1	0	1	0	4
<i>Callophrys perplexa</i> (perplexing green hairstreak)	18	14	5	0	1	0	38
<b>Hesperiidae (Skippers)</b>							
<i>Atalopedes campestris</i> (sachem)	0	0	9	0	0	0	9
<i>Erynnis funeralis</i> (funereal duskywing)	0	1	0	0	1	0	2
<i>Erynnis tristis</i> (sad duskywing)	0	1	0	0	0	0	1
<i>Erynnis propertius</i> (propertius duskywing)	2	3	5	3	2	4	19
<i>Erynnis brizo</i> (sleepy duskywing)	1	1	0	0	0	0	2
<i>Erynnis</i> sp. (duskywing sp.)	0	1	0	0	0	0	1
<i>Pyrgus communis</i> (checkered skipper)	1	3	0	0	2	0	6
<i>Heliopetes ericetorum</i> (northern white skipper)	0	0	0	0	2	0	2
<i>Hesperia juba</i> (juba skipper)	0	3	2	17	1	0	23
<i>Polites sabuleti</i> (sandhill skipper)	0	7	2	20	35	5	69
<i>Philosora catullus</i> (common sootywing)	0	2	6	1	3	0	12



	Survey Week 1	Survey Week 2	Survey Week 3	Survey Week 4	Survey Week 5	Survey Week 6	TOTAL
Moths							
<i>Autographa californica</i>	1	0	0	0	0	0	1
<i>Chrismania pictipennalis</i>	5	0	0	0	0	0	5
<i>Drasteria divergens</i>	1	0	0	0	0	0	1
<i>Drasteria edwardsii</i>	8	0	0	0	0	0	8
<i>Drasteria pallescens</i>	1	0	0	0	0	0	1
<i>Drasteria tejonica</i>	1	3	0	0	0	0	4
<i>Euproserpinus phaeton</i>	4	0	0	0	0	0	4
<i>Heliothis belladonna</i>	2	0	0	2	0	0	4
<i>Litocola sexsignata</i>	21	0	0	0	0	0	21
<i>Loxostege immerens</i>	7	0	0	0	0	0	7
<i>Schinia amaryllis</i>	2	0	0	0	0	0	2
<i>Kodiosoma fulva</i>	0	0	0	1	0	0	1

<sup>A</sup> The Quino survey area (within the LanEast project site) was initially part of a larger survey area that was separated into three separate CPV projects (LanWest Solar Farm, LanEast Solar Farm, and Rugged Solar Farm) after the completion of protocol Quino checkerspot butterfly (*Euphydryas editha quino*) surveys. LanWest Solar Farm is located adjacent to and west of the proposed project site. Rugged Solar Farm is located north of Interstate 8. All three project sites were surveyed for Quino during the same period. This list of butterfly and moth species observations represents species detected for both the LanWest and LanEast projects (but does not include observations from the Rugged Solar site).

**APPENDIX B**  
**DAILY WEATHER CONDITIONS**  
**DURING QUINO SURVEYS**

## Appendix B

### Daily Weather Conditions During Quino Surveys<sup>A</sup>

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum <sup>C</sup> (mph)	Cloud Cover (%)	General Sky Condition
3/30/2011	1	Margaret Mulligan	1410	75	2-5	40	patchy
3/30/2011	1	Margaret Mulligan	1600	75	2-5	65	patchy
3/30/2011	1	Ken Osborne	0900	70	4-8	0	clear
3/30/2011	1	Ken Osborne	0910	68	0-3	0	clear
3/30/2011	1	Ken Osborne	1200	73	6-17	0	clear
3/30/2011	1	Ken Osborne	1420	74	0-4	2	high haze
3/30/2011	1	Ken Osborne	1623	73	3-7	5	haze
3/31/2011	1	Margaret Mulligan	0900	64	3-6	10	clear
3/31/2011	1	Margaret Mulligan	1110	70	2-4	10	clear
3/31/2011	1	Margaret Mulligan	1400	76	3-6	0	clear
3/31/2011	1	Margaret Mulligan	1600	78	2-4	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	0830	60	0-3	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	0900	61	1-5	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	1000	64	1-5	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	1100	69	1-7	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	1200	68	3-8	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	1300	67	3-7	0	clear
4/4/2011	2	Mike Couffer, Brennan Mulrooney <sup>B</sup>	1400	71	2-5	0	clear
4/5/2011	2	Erin Bergman, Brennan Mulrooney <sup>B</sup>	0930	-	-	0	clear
4/5/2011	2	Erin Bergman, Brennan Mulrooney <sup>B</sup>	1153	75	2-4	0	clear
4/5/2011	2	Erin Bergman, Brennan Mulrooney <sup>B</sup>	1200	77	2-5	0	clear
4/5/2011	2	Erin Bergman, Brennan Mulrooney <sup>B</sup>	1300	80	2-5	0	clear
4/5/2011	2	Erin Bergman, Brennan Mulrooney <sup>B</sup>	1400	80	2-5	0	clear
4/5/2011	2	Erin Bergman, Brennan Mulrooney <sup>B</sup>	1500	79	2-5	0	clear
4/5/2011	2	Ken Osborne, Erin Bergman	1153	75	2-4	0	clear
4/5/2011	2	Ken Osborne, Erin Bergman	1555	70	3-6	40	overcast
4/13/2011	3	Erin Bergman	1130	65	1-2	0	clear
4/13/2011	3	Erin Bergman	1200	66	1-2	0	clear
4/13/2011	3	Erin Bergman	1230	66	1-2	0	clear
4/13/2011	3	Erin Bergman	1300	61	3-6	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum <sup>C</sup> (mph)	Cloud Cover (%)	General Sky Condition
4/13/2011	3	Erin Bergman	1330	32	3-6	0	clear
4/13/2011	3	Erin Bergman	1400	61	4-7	0	clear
4/13/2011	3	Mike Couffer	1119	63	3-7	0	clear
4/13/2011	3	Mike Couffer	1200	62	4-9	0	clear
4/13/2011	3	Mike Couffer	1300	62	4-7	0	clear
4/13/2011	3	Mike Couffer	1400	61	4-7	0	clear
4/13/2011	3	Mike Couffer	1500	60	4-10	0	clear
4/14/2011	3	Mike Couffer	0845	60	1-2	0	clear
4/14/2011	3	Mike Couffer	0900	61	0-1	0	clear
4/14/2011	3	Mike Couffer	1000	63	0-1	0	clear
4/14/2011	3	Mike Couffer	1100	66	0-2	0	clear
4/14/2011	3	Mike Couffer	1200	68	0-4	0	clear
4/14/2011	3	Mike Couffer	1300	72	0-3	0	clear
4/14/2011	3	Mike Couffer	1400	73	0-2	0	clear
4/14/2011	3	Mike Couffer	1500	71	1-5	0	clear
4/14/2011	3	Mike Couffer	1600	71	0-2	0	clear
4/15/2011	3	Mike Couffer	0900	66	1-5	0	clear
4/15/2011	3	Mike Couffer	1000	70	1-10	0	clear
4/15/2011	3	Mike Couffer	1100	71	2-10	0	clear
4/18/2011	4	Ken Osborne	1100	60	4-5	50	patchy
4/18/2011	4	Ken Osborne	1252	67	5-12	25	overcast
4/18/2011	4	Ken Osborne	1400	69	10-19	30	overcast
4/18/2011	4	Mike Couffer	1100	60	0-4	25	patchy
4/18/2011	4	Mike Couffer	1200	68	0-4	0	clear
4/18/2011	4	Mike Couffer	1300	72	0-2	40	patchy
4/18/2011	4	Mike Couffer	1400	71	8-15	90	overcast
4/20/2011	4	Mike Couffer, James McMorran <sup>B</sup>	0930	64	3-6	5	clear
4/20/2011	4	Mike Couffer, James McMorran <sup>B</sup>	1000	71	0-3	5	clear
4/20/2011	4	Mike Couffer, James McMorran <sup>B</sup>	1100	73	0-5	5	clear
4/20/2011	4	Mike Couffer, James McMorran <sup>B</sup>	1145	75	5-9	0	clear
4/26/2011	5	Mike Couffer	1230	76	0-3	0	clear
4/26/2011	5	Mike Couffer	1300	77	0	0	clear
4/26/2011	5	Mike Couffer	1400	80	0-1	0	clear
4/26/2011	5	Mike Couffer	1500	78	2-6	0	clear
4/26/2011	5	Ken Osborne	1345	71	2-5	0	clear
4/26/2011	5	Ken Osborne	1410	72	4-5	0	clear
4/27/2011	5	Mike Couffer	0830	70	0-4	0	clear

Date	Survey Week	Personnel	Time	Temperature (°F)	Wind Speed Average/ Maximum <sup>C</sup> (mph)	Cloud Cover (%)	General Sky Condition
4/27/2011	5	Mike Couffer	0900	72	0-4	0	clear
4/27/2011	5	Mike Couffer	1000	73	0-4	0	clear
4/27/2011	5	Mike Couffer	1100	73	0-5	0	clear
4/27/2011	5	Mike Couffer	1200	77	1-7	0	clear
4/27/2011	5	Mike Couffer	1300	76	2-8	0	clear
4/27/2011	5	Mike Couffer	1400	74	2-6	0	clear
4/28/2011	5	Mike Couffer	0900	73	1-7	0	clear
4/28/2011	5	Mike Couffer	1000	84	0-2	0	clear
4/28/2011	5	Mike Couffer	1100	84	0-1	0	clear
4/28/2011	5	Mike Couffer	1200	79	3-10	0	clear
4/28/2011	5	Mike Couffer	1300	82	1-5	0	clear
4/28/2011	5	Mike Couffer	1400	79	3-10	0	clear
4/28/2011	5	Mike Couffer	1500	80	4-10	0	clear
5/2/2011	6	Margaret Mulligan	0900	64	4-8	0	clear
5/2/2011	6	Margaret Mulligan	1200	70	4-11	0	clear
5/2/2011	6	Erin Bergman	0850	64	4-8	0	clear
5/2/2011	6	Erin Bergman	0950	72	4-9	0	clear
5/2/2011	6	Erin Bergman	1200	74	8-10	0	clear
5/3/2011	6	Margaret Mulligan, Erin Bergman	0900	75	2-5	0	clear
5/3/2011	6	Margaret Mulligan, Erin Bergman	1130	78	3-6	0	clear
5/4/2011	6	Bonnie Hendricks	1150	84.5	3-6	0	clear
5/4/2011	6	Bonnie Hendricks	1245	88.2	4-6	0	clear
5/4/2011	6	Bonnie Hendricks	1340	89.5	5-8	0	clear
5/4/2011	6	Bonnie Hendricks	1430	95	1-3	0	clear
5/4/2011	6	Bonnie Hendricks	1530	94.5	3-5	0	clear
5/4/2011	6	Bonnie Hendricks	1600	94	4-7	0	clear

<sup>A</sup> The Quino survey area (within the LanEast project site) was initially part of a larger survey area that was separated into three separate CPV projects (LanWest Solar Farm, LanEast Solar Farm, and Rugged Solar Farm) after the completion of protocol Quino checkerspot butterfly (*Euphydryas editha quino*) surveys. LanWest Solar Farm is located adjacent to and west of the proposed project site. Rugged Solar Farm is located north of Interstate 8. All three project sites were surveyed for Quino during the same period. This table of daily weather conditions contains weather information for both the LanWest and LanEast projects, but does not include weather information from the Rugged Solar site.

<sup>B</sup> Supervised biologist

<sup>C</sup> At times, wind gusts occurred that were more than 15 mph, but this was never sustained. If sustained winds were 15 mph or higher, surveys were stopped.

**APPENDIX C**  
**FIELD DATA COLLECTED**  
**DURING QUINO SURVEYS**



# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Margie Mulligan Add'l Person: \_\_\_\_\_ Date: 3-30-11 GPS Unit: 12

Project: Concentrix Solar Project Map #: 7 Survey Sxn: \_\_\_\_\_ QCB Protocol Survey # 1 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start <u>1400</u>	<u>75°</u>	<u>2-5</u>	<u>40</u>	clear	patchy	overcast	drizzle	shower
<u>1600</u>	<u>75°</u>	<u>2-5</u>	<u>45</u>	clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
End				clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Total		Total	
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funealis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus communis</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia jubia</i> (Jubia Skipper)	
<i>Junonia coenia</i> (Common Buckeye)		<i>Polites sabuloli</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia heckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orange-tip)			
<i>Anthocharis cethura</i> (Felder's Orange-tip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harrfordii</i> (Harrford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)			
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marnia</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus cearanus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)			
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elf)			
<i>Callophrys dumetorum</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides helosus</i> (Great Purple Hairstreak)			

# al Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

JNS:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input checked="" type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Long-stem Golden-yarrow
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillardia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linantus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linantus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah microcarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input checked="" type="checkbox"/> <i>Plantago patagonica</i>	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Roripa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilla
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-straw
<input checked="" type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input checked="" type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Doble-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

☐ *Lotus stuebelii*  
☐ *Lupinus hirsutus*  
☐ *Rhus microbachne*  
☐ *Lupinus albus*

## Rare Wildlife or Rare Plants:

☐ *Gutierrezia viscosa*  
☐ MMLG100  
☐ 100 - 50+ plants  
☐ 102 - 20+ plants  
☐ 103 - 20+ plants  
☐ 104

☐ *Astragalus Bouglasi Pershides*  
☐ MMLD 100-104

☐ *Linantus bellus*  
☐ MMLB100

☐ *Streptanthus campestris*  
☐ MMSC100

☐ Nest = Raven → see map

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

144834 mi on site

Recorder: K. H. O'Leary Add'l Person: 10 Date: 3/30/2011 GPS Unit: 10

Project: Concentrix Solar Project Map #: 6 Survey Sxn: 6 QCB Protocol Survey #: 1 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>9:10</u>	<u>68</u>	<u>0-3</u>	<u>0</u>	<u>clear</u> <u>cloudy</u> <u>overcast</u> <u>drizzle</u> <u>showers</u>
<u>9:40</u>	<u>70</u>	<u>4-8</u>	<u>0</u>	<u>clear</u> <u>cloudy</u> <u>overcast</u> <u>drizzle</u> <u>showers</u>
<u>12:40</u>	<u>73</u>	<u>6-17</u>	<u>0</u>	<u>clear</u> <u>cloudy</u> <u>overcast</u> <u>drizzle</u> <u>showers</u>
<u>1:20</u>	<u>74</u>	<u>8-4</u>	<u>22</u> <u>high base</u>	<u>clear</u> <u>cloudy</u> <u>overcast</u> <u>drizzle</u> <u>showers</u>
<u>End 1:23</u>	<u>73</u>	<u>3-7</u>	<u>5%</u> <u>low</u>	<u>clear</u> <u>cloudy</u> <u>overcast</u> <u>drizzle</u> <u>showers</u>

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Total	Total
<b>Nymphalidae (Brushfooted Butterflies)</b>	<b>Hesperiidae (Skippers)</b>
<i>Euphydryas editha</i> (Quino Checkerspot)	<i>Erynnis funeralis</i> (Funereal Duskywing)
<i>Euphydryas chalcedona</i> (Henna's Checkerspot)	<i>Erynnis tristis</i> (Sad Duskywing)
<i>Thessalia tesira</i> (Wright's Checkerspot)	<i>Erynnis propertius</i> (Propertius Duskywing) <u>11</u>
<i>Chlosyne californica</i> (California Patch)	<i>Erynnis brizo</i> (Steepy Duskywing) <u>1</u>
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)	<i>Pyrgus communis</i> (Checkered Skipper) <u>1</u> <u>4/10/2005</u>
<i>Phyciodes mylitta</i> (Mylitta Crescent)	<i>Hesperia juba</i> (Juba Skipper)
<i>Junonia coenia</i> (Common Buckeye)	<i>Polites sabuleti</i> (Sandhill Skipper)
<i>Vanessa annabella</i> (West Coast Lady)	<b>Megathymidae (Giant Skippers)</b>
<i>Vanessa atalanta</i> (Red Admiral)	<i>Megathymus yuccae</i> (Yucca Giant Skipper)
<i>Vanessa cardui</i> (Painted Lady) <u>11</u>	
<i>Vanessa virginianensis</i> (Virginia Lady)	<b>Other Butterflies:</b>
<i>Nymphalis californica</i> (California Tortoiseshell)	
<b>Danaidae (Milkweed Butterflies)</b>	
<i>Danaus plexippus</i> (Monarch)	
<i>Danaus gilippus</i> (Queen)	
<b>Satyridae (Satyrs)</b>	<b>Notes:</b>
<i>Coenonympha californica</i> (Common California Ringlet)	<i>Kiticola sexsignata</i> <u>11/11/11</u> <u>x 21</u>
<b>Pieridae (Whites, Sulphurs)</b>	<i>Drastera taylori</i> <u>1</u>
<i>Pieris rapae</i> (Cabbage White)	<i>Ruphosarpius phlox</i> <u>11</u>
<i>Pontia sisymbrii</i> (Spring White)	<i>Colletia ? (En. vaucheri)</i> <u>1</u>
<i>Pontia beckeri</i> (Baker's White)	<i>Schizothorax</i> <u>11</u>
<i>Pontia protodice</i> (Common White)	<i>Drastera edwardsi</i> <u>11</u>
<i>Anthocharis sara</i> (Sara Orange-tip) <u>1</u>	<i>Heliothis belladonna</i> <u>11</u>
<i>Anthocharis cethura</i> (Felder's Orange-tip)	<i>Drastera divergens</i> <u>1</u>
<i>Euchloe hyantis</i> (Desert Pearty Marble) <u>11/11</u>	<i>Drastera pallescens</i> <u>1</u>
<i>Colias eurytheme</i> (Orange Sulphur) <u>11/11</u>	<i>"Camissaria pyralis" (En. vaucheri)</i> <u>1</u>
<i>Colias harfordii</i> (Harford's Sulphur) <u>1</u>	
<i>Nathalis iole</i> (Dainty Sulphur)	
<b>Papilionidae (Swallowtails)</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)	
<i>Papilio eurymedon</i> (Pate swallowtail)	
<i>Papilio rutulus</i> (Western Tiger Swallowtail)	
<b>Riodinidae (Metalmarks)</b>	
<i>Apodemia mormo</i> (Behr's Metalmark) <u>11/11/11</u> <u>x 11</u>	
<b>Lycaenidae (Hairstreaks and Blues)</b>	
<i>Celastrina ladon</i> (Spring Azure)	
<i>Leptotes marina</i> (Marine Blue)	
<i>Brephidium exilis</i> (Western Pygmy Blue)	
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)	
<i>Hemiergis cerninus</i> (Edward's Blue)	
<i>Icaria ecom</i> (Acmon Blue) <u>11/11/11</u>	
<i>Philothes sonorensis</i> (Sonoran Blue)	
<i>Callophrys augustinus</i> (Brown Elf) <u>11</u>	
<i>Callophrys dumetorum</i> (Perplexing Green Hairstreak) <u>11/11/11</u> <u>11</u>	<u>= C. perplexa</u>
<i>Strymon molinus</i> (Gray Hairstreak)	
<i>Atides halesus</i> (Great Purple Hairstreak)	

Use Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input checked="" type="checkbox"/> <i>Camissonia</i> sp. <i>bristly</i>	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input checked="" type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitehorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Encarnia</i> sp. <i>linearifolia</i>	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Long-stem Golden-yarrow
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i>	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i>	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i>	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmaenia tenella</i>	Osmaenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input checked="" type="checkbox"/> <i>Phacelia</i> sp. <i>distans?</i>	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Flesta Flower
<input checked="" type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Roripa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Salpiglossis australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input checked="" type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecups
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

**Other Flowering Plants:**

*Rhus trilobata*

**Rare Wildlife or Rare Plants:**

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Margie Mulligan Add'l Person: \_\_\_\_\_

Date: 3-31-11

GPS Unit: 5

Project: Concentrix Solar Project Map #: 7 Survey Sxn: \_\_\_\_\_

OCB Protocol Survey # 1

of 5

TIME (24-hour)	Temp (°F)	Wind (avg/max)	% CC	Sky
Start <u>0900</u>	<u>64°F</u>	<u>3-6</u>	<u>10</u>	<u>clear</u> patchy overcast drizzle shower
<u>1110</u>	<u>70°F</u>	<u>2-4</u>	<u>10</u>	<u>clear</u> patchy overcast drizzle shower
<u>1400</u>	<u>76°F</u>	<u>3-6</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1600</u>	<u>78°F</u>	<u>7-4</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
End				<u>clear</u> patchy overcast drizzle shower

Habitat On-site (circle): open soils, hillsides, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Total

Total

## Nymphalidae (Brushfooted Butterflies)

*Euphydryas editha* (Quino Checkerspot)

*Euphydryas chalcedona* (Henne's Checkerspot)

*Thessalia leanira* (Wright's Checkerspot)

*Chlosyne californica* (California Patch)

*Chlosyne gabbii* (Gabb's Checkerspot)

*Phyciodes mylitta* (Mylitta Crescent)

*Junonia coenia* (Common Buckeye)

*Vanessa annabella* (West Coast Lady)

*Vanessa atalanta* (Red Admiral)

*Vanessa cardui* (Painted Lady)

*Vanessa virginiensis* (Virginia Lady)

*Nymphalis californica* (California Tortoiseshell)

## Danaidae (Milkweed Butterflies)

*Danaus plexippus* (Monarch)

*Danaus gilippus* (Queen)

## Satyrinae (Satyrs)

*Cosmonympha californica* (Common California Ringlet)

## Pieridae (Whites, Sulphurs)

*Pieris rapae* (Cabbage White)

*Pontia sisymbrii* (Spring White)

*Pontia beckeri* (Baker's White)

*Pontia protodice* (Common White)

*Anthocharis sara* (Sara Orange-tip)

*Anthocharis cethura* (Felder's Orange-tip)

*Euchloe hyantis* (Desert Pearly Marble)

*Colias eurytheme* (Orange Sulphur)

*Colias harfordii* (Harford's Sulphur)

*Nathalis iole* (Dainty Sulphur)

## Papilionidae (Swallowtails)

*Papilio polyxenes* (Desert Black Swallowtail)

*Papilio eurymedon* (Pale Swallowtail)

*Papilio rutulus* (Western Tiger Swallowtail)

## Riodiniade (Metalmarks)

*Apodemis mormo* (Behr's Metalmark)

## Lycaenidae (Hairstreaks and Blues)

*Gelastrina laron* (Spring Azure)

*Leptotes marina* (Marine Blue)

*Brephidium exile* (Western Pygmy Blue)

*Glaucopsyche lygdamus* (Southern Blue/Silvery blue)

*Hemimeris cernauna* (Edward's Blue)

*Icaria acron* (Acron Blue)

*Philotis sonorosis* (Sonoran Blue)

*Callophrys augustinus* (Brown Elfin)

*Callophrys dumetorum* (Perplexing Green Hairstreak)

*Strymon melinus* (Gray Hairstreak)

*Atlides halesus* (Great Purple Hairstreak)

*Euclyptus amyntula* (Western Tailed Blue)

*Euclyptus amyntula* (Western Tailed Blue)

*Euclyptus amyntula* (Western Tailed Blue)

*Euclyptus amyntula* (Western Tailed Blue)

*Euclyptus amyntula* (Western Tailed Blue)

## Hesperiidae (Skippers)

*Erynnis funeralis* (Funereal Duskywing)

*Erynnis tristis* (Sad Duskywing)

*Erynnis proterpius* (Proterpius Duskywing)

*Erynnis brizo* (Sleepy Duskywing)

*Pyrgus communis* (Checkered Skipper)

*Hesperia juba* (Juba Skipper)

*Polites sabuleti* (Sandhill Skipper)

## Megathymidae (Giant Skippers)

*Megathymus yuccae* (Yucca Giant Skipper)

## Other Butterflies:

Notes:

blue - photo!

# Partial Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

actions:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input checked="" type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input checked="" type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input checked="" type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input checked="" type="checkbox"/> <i>Boeckera sp.</i>	Rock Cress
<input checked="" type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input checked="" type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input checked="" type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input checked="" type="checkbox"/> <i>Camissonia sp.</i>	Sun Cup
<input checked="" type="checkbox"/> <i>Castilleja <del>sp.</del></i>	Paintbrush
<input checked="" type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input checked="" type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input checked="" type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input checked="" type="checkbox"/> <i>Ceanothus greggii</i>	Cup-tea-lilac
<input checked="" type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input checked="" type="checkbox"/> <i>Cheeractis artemisiifolia</i>	White Pincushion
<input checked="" type="checkbox"/> <i>Cheeractis glabriuscula</i>	Yellow Pincushion
<input checked="" type="checkbox"/> <i>Clematis sp.</i>	Clematis
<input checked="" type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input checked="" type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input checked="" type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input checked="" type="checkbox"/> <i>Corithrogynis filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha sp.</i>	Cryptantha
<input checked="" type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input checked="" type="checkbox"/> <i>Descurainia sp.</i>	Tansy-mustard
<input checked="" type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input checked="" type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input checked="" type="checkbox"/> <i>Dudleya sp.</i>	Dudleya
<input checked="" type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input checked="" type="checkbox"/> <i>Eriastrum sp.</i>	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria sp. <del>linenifolia</del></i>	Golden-ush
<input checked="" type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input checked="" type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input checked="" type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input checked="" type="checkbox"/> <i>Eriogonum sp.</i>	Buckwheat
<input checked="" type="checkbox"/> <i>Eriophyllum <del>sp.</del></i>	<del>Long-stem Golden-yellow</del>
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i>	Red-stem Storksbill
<input checked="" type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input checked="" type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input checked="" type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spoiled Hideseed
<input checked="" type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input checked="" type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input checked="" type="checkbox"/> <i>Gilia sp.</i>	Gilia
<input checked="" type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input checked="" type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input checked="" type="checkbox"/> <i>Guillemia serotina</i>	Broom Matchweed
<input checked="" type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input checked="" type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input checked="" type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input checked="" type="checkbox"/> <i>Lepidium sp.</i>	Pepperweed
<input checked="" type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input checked="" type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input checked="" type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input checked="" type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input checked="" type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input checked="" type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input checked="" type="checkbox"/> <i>Marrubium vulgare</i>	Horehound
<input checked="" type="checkbox"/> <i>Matricaria matricarioides</i>	Common Pineapple-weed
<input checked="" type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-teak
<input checked="" type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input checked="" type="checkbox"/> <i>Mimulus sp.</i>	Monkeyflower
<input checked="" type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input checked="" type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input checked="" type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input checked="" type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input checked="" type="checkbox"/> <i>Pectocarya sp.</i>	Pectocarya
<input checked="" type="checkbox"/> <i>Phacelia sp.</i>	Phacelia
<input checked="" type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input checked="" type="checkbox"/> <i>Plagiobothrys sp.</i>	Popcornflower
<input checked="" type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input checked="" type="checkbox"/> <i>Platystemon californicus</i>	Creami Cups
<input checked="" type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input checked="" type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input checked="" type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input checked="" type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input checked="" type="checkbox"/> <i>Rosa californica</i>	California Rose
<input checked="" type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilla
<input checked="" type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input checked="" type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input checked="" type="checkbox"/> <i>Sidicea malvaeflora</i>	Checker-bloom
<input checked="" type="checkbox"/> <i>Sisymbrium sp.</i>	Tumble Mustard
<input checked="" type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input checked="" type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input checked="" type="checkbox"/> <i>Stephanomeria sp.</i>	Wreathplant
<input checked="" type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input checked="" type="checkbox"/> <i>Stylocline gnaphaloides</i>	Everlasting Nest-straw
<input checked="" type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input checked="" type="checkbox"/> <i>Thysanocarpus sp.</i>	Fringepod
<input checked="" type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input checked="" type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input checked="" type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input checked="" type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

Other Flowering Plants:

*Taraxacum officinale*

Rare Wildlife or Rare Plants:

*Goreea viscida*

MM6V01-07

*Astragalus douglasii* *pushtichus*

MMAD01-10

*Linanthus bellus*

MMLE01-05

*Streptanthus campestris*

MMSC01

Mortero → Rock w/ 3 morteros and shards of clay pots. Looks like someone set them there.



# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: MIKE COUFFER Add'l Person: BRENNAN MULLOONY Date: 4 APRIL, 2011 GPS Unit: 20

Project: Concentrix Solar Project Map #: 6 Survey Sxn: — QCB Protocol Survey # 20 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>0830 HRS</u>	<u>60°F</u>	<u>0→3</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>0900</u>	<u>61°F</u>	<u>1→5</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1000</u>	<u>64°F</u>	<u>1→5</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1100</u>	<u>69°F</u>	<u>1→7</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1200</u>	<u>68°F</u>	<u>3→8</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1300</u>	<u>67°F</u>	<u>3→7</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
End <u>1400</u>	<u>71°F</u>	<u>2→5</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Total		Total	
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis proterpius</i> (Proterpius Duskywing)	<u>2</u>
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Steepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus communis</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia jubia</i> (Jubia Skipper)	
<i>Junonia coenia</i> (Common Buckeye)		<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabolla</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)		<b>Other Butterflies:</b>	
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>COMMON SOOTY WING</b>	<u>22</u>
<i>Nymphalis californica</i> (California Tortoiseshell)		<b>VANESSA SP.</b>	<u>22</u>
<b>Danaidae (Milkweed Butterflies)</b>		<b>CLOUDLESS SULPHUR</b>	<u>22</u>
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	<u>1</u>		
<i>Anthocharis sara</i> (Sara Orangetip)	<u>8</u>		
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)	<u>1</u>		
<i>Colias eurytheme</i> (Orange Sulphur)	<u>1</u>		
<i>Colias harfordii</i> (Harford's Sulphur)	<u>2</u>		
<i>Nathalis iole</i> (Dainty Sulphur)	<u>5</u>		
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		<u>1500 HRS, 73°F, WIND=0→4 MPH, CLEAR.</u>	
<i>Papilio eurymedon</i> (Pale Swallowtail)		<u>1600 HRS, 73°F, WIND=0→2 MPH, CLEAR.</u>	
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Rhodinidae (Metamarks)</b>			
<i>Apodemia mormo</i> (Behr's Metamark)	<u>100</u>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exilis</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	<u>6</u>		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys dumetorum</i> (Perplexing Green Hairstreak)	<u>3</u>		
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			
<b>WESTERN TAILED BLUE</b>	<u>2</u>		

# Initial Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

ions:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Manzanita Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glehniscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriogonum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Long-stem Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Gutierrezia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input checked="" type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanché bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input checked="" type="checkbox"/> <i>Plegiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercolorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea melvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylodine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Colton-lhorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

MCBJ01 LB01 BLACK-TAILED JACKRABBIT  
 MC VIBANT BELL 1 DESERT BEAUTY  
 MCBJ02 B.T. JACKRABBIT  
 BMH101 S.D. HORNES LIZARD

146275 union st  
Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Kan Osborn Add'l Person: Erin Bergman Date: 4/5/2011 GPS Unit: 5

Project: Concentrix Solar Project Map #: 7 Survey Sxn: 7 QCB Protocol Survey # 2 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start <u>1153</u>	<u>75</u>	<u>2-4</u>	<u>0</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>showers</u>
				clear	patchy	overcast	drizzle	showers
				clear	patchy	overcast	drizzle	showers
				clear	patchy	overcast	drizzle	showers
				clear	patchy	overcast	drizzle	showers
End <u>355</u>	<u>70</u>	<u>3-6</u>	<u>40%</u>	clear	patchy	overcast	drizzle	showers

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot) <u>/</u>	<u>1</u>	<i>Erynnis tristis</i> (Sad Duskywing)	<u>1</u>
<i>Thessalia leonira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Properius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Steep Duskywing)	<u>1</u>
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper) <u>11</u>	<u>2</u>
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper) <u>1</u> <u>H juba</u>	<u>1</u>
<i>Junonia coenia</i> (Common Buckeye) <u>111</u>	<u>5</u>	<i>Polites sabuleti</i> (Sandhill Skipper) <u>111</u>	<u>3</u>
<i>Vanessa annabella</i> (West Coast Lady) <u>/</u>	<u>1</u>	<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady) <u>/</u>	<u>1</u>	<b>Other Butterflies:</b>	
<i>Vanessa virginiensis</i> (Virginia Lady)			
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)		<u>Moths</u>	
<b>Pieridae (Whites, Sulphurs)</b>		<i>Drastaria tejonica</i> <u>111</u>	<u>3</u>
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White) <u>111</u>	<u>3</u>		
<i>Anthocharis sara</i> (Sara Orange-tip) <u>111</u>	<u>4</u>		
<i>Anthocharis cethura</i> (Felder's Orange-tip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble) <u>/</u>	<u>1</u>		
<i>Colias eurytheme</i> (Orange Sulphur) <u>11</u>	<u>2</u>		
<i>Colias harrfordii</i> (Harford's Sulphur) <u>11</u>	<u>2</u>		
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale Swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Rhodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark) <u>15</u>	<u>15</u>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Loptoclis marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue) <u>11</u>	<u>2</u>		
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus cerasus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue) <u>111</u>	<u>3</u>		
<i>Philotis sonorensis</i> (Sonoran Blue) <u>11</u>	<u>2</u>		
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak) <u>111</u>	<u>6</u>		
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Altides halesus</i> (Great Purple Hairstreak)			

# Partial Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Ceanothus</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input checked="" type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input checked="" type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasianthus gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-teak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Namophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia lanella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Salpiglossis australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input checked="" type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Evan Bergman Add'l Person: \_\_\_\_\_

Date: 4/13/11

GPS Unit: \_\_\_\_\_

Project: Concentrix Solar Project Map #: \_\_\_\_\_

Survey Sxn: \_\_\_\_\_

QCB Protocol Survey # \_\_\_\_\_

of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>11:30</u>	<u>65°</u>	<u>1-2</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>12:00</u>	<u>66°</u>	<u>1-2</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>12:30</u>	<u>66°</u>	<u>1-2</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1:00</u>	<u>67°</u>	<u>3-6</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1:30</u>	<u>67°</u>	<u>3-6</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>2:00</u>	<u>67°</u>	<u>4-7</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
End				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Nymphalidae (Brushfooted Butterflies)		Total	Hesperiidae (Skippers)		Total
<i>Euphydryas editha</i> (Quino Checkerspot)			<i>Erynnis funeralis</i> (Funereal Duskywing)		
<i>Euphydryas chalcedona</i> (Henna's Checkerspot)			<i>Erynnis tristis</i> (Sad Duskywing)		
<i>Thessalia ianira</i> (Wright's Checkerspot)			<i>Erynnis propertius</i> (Propertius Duskywing)		
<i>Chlosyne californica</i> (California Patch)			<i>Erynnis brizo</i> (Steeple Duskywing)		
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)			<i>Pyrgus albescon</i> (Checkered Skipper)		
<i>Phyciodes mylitta</i> (Mylitta Crescent)			<i>Hesperia juba</i> (Juba Skipper)		
<i>Junonia coenia</i> (Common Buckeye)	<u>111</u>	<u>5</u>	<i>Polites sabuleti</i> (Sandhill Skipper)		
<i>Vanessa annabella</i> (West Coast Lady)			<b>Megathymidae (Giant Skippers)</b>		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Megathymus yuccae</i> (Yucca Giant Skipper)		
<i>Vanessa cardui</i> (Painted Lady)			<u>Common Satyrinae</u>		
<i>Vanessa virginiensis</i> (Virginia Lady)			<b>Other Butterflies:</b>		
<i>Nymphalis californica</i> (California Tortoiseshell)			<i>Basilinna</i>		
<b>Danaidae (Milkweed Butterflies)</b>			<i>Cybele</i>		
<i>Danaus plexippus</i> (Monarch)			<i>White</i>		
<i>Danaus gilippus</i> (Queen)			<i>Black</i>		
<b>Satyrinae (Satyrs)</b>			<i>Small</i>		
<i>Coenonympha californica</i> (Common California Ringlet)			<i>Medium</i>		
<b>Pieridae (Whites, Sulphurs)</b>			<i>Large</i>		
<i>Pieris rapae</i> (Cabbage White)			<i>Small</i>		
<i>Pontia sisymbrii</i> (Spring White)			<i>Medium</i>		
<i>Pontia beckeri</i> (Baker's White)			<i>Large</i>		
<i>Pontia protodice</i> (Common White)			<i>Small</i>		
<i>Anthocharis sara</i> (Sara Orange-tip)			<i>Medium</i>		
<i>Anthocharis cethura</i> (Felder's Orange-tip)			<i>Large</i>		
<i>Euchloe hyantis</i> (Desert Pearly Marble)			<i>Small</i>		
<i>Colias eurytheme</i> (Orange Sulphur)			<i>Medium</i>		
<i>Colias harfordii</i> (Harford's Sulphur)			<i>Large</i>		
<i>Nathalis iole</i> (Dainty Sulphur)			<i>Small</i>		
<b>Papilionidae (Swallowtails)</b>			<i>Medium</i>		
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			<i>Large</i>		
<i>Papilio eurymedon</i> (Pale Swallowtail)			<i>Small</i>		
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			<i>Medium</i>		
<b>Riodinidae (Metalmarks)</b>			<i>Large</i>		
<i>Apodemia mormo</i> (Behr's Metalmark)	<u>11111111</u>	<u>16</u>	<i>Small</i>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			<i>Medium</i>		
<i>Calistrina iadon</i> (Spring Azure)			<i>Large</i>		
<i>Leptotes marina</i> (Marine Blue)			<i>Small</i>		
<i>Brachydium exile</i> (Western Pygmy Blue)			<i>Medium</i>		
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			<i>Large</i>		
<i>Hemiargus ceraunus</i> (Edward's Blue)			<i>Small</i>		
<i>Icaria acmon</i> (Acmon Blue)	<u>111</u>	<u>3</u>	<i>Medium</i>		
<i>Philois sonorensis</i> (Sonoran Blue)			<i>Large</i>		
<i>Calophrys augustinus</i> (Brown Elfin)			<i>Small</i>		
<i>Calophrys perplexa</i> (Perplexing Green Hairstreak)	<u>111</u>	<u>4</u>	<i>Medium</i>		
<i>Strymon melinus</i> (Gray Hairstreak)			<i>Large</i>		
<i>Atides halesus</i> (Great Purple Hairstreak)			<i>Small</i>		

Notes:

Surveyed for 1 hr on 4/7 and 4/8. SDC road was very dry weather (too cold in morning).

Area # 7 - new fence and old SDC road

2Bav 01-1  
2Bav 01-2  
2Bav 01-3  
2Bav 02-1  
2Bav 03-1  
2Bav 04-1  
2Bav 05-1  
2Bav 06-1  
2Bav 07-1  
2Bav 08-2  
2Bav 09-1  
2Bav 10-1  
2Bav 11-1  
2Bav 12-1  
2Bav 13-1  
2Bav 14-3  
2Bav 15-1  
2Bav 16-1  
2Bav 17-1  
2Bav 18-1  
2Bav 19-1  
2Bav 20-1  
2Bav 21-1  
2Bav 22-1  
2Bav 23-1  
2Bav 24-1  
2Bav 25-1  
2Bav 26-1  
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2Bav 88-1  
2Bav 89-1  
2Bav 90-1  
2Bav 91-1  
2Bav 92-1  
2Bav 93-1  
2Bav 94-1  
2Bav 95-1  
2Bav 96-1  
2Bav 97-1  
2Bav 98-1  
2Bav 99-1  
2Bav 100-1

# Antirrhinum coulterianum or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

▶ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input checked="" type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Cernissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input checked="" type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabrescens</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input checked="" type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input checked="" type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Eulhamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input checked="" type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input checked="" type="checkbox"/> <i>Hirshfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nomophila menzeisii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pedocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Roripa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input checked="" type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input checked="" type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Colton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

*Lupinus communis*  
*Cryptantha leucodermis*  
*Eriogonum fasciculatum*  
*Phacelia digitata*  
*Uropappus lindleyi*

## Rare Wildlife or Rare Plants:

#600000  
 586022-2  
 586023-2  
 586024-3  
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 586026-2  
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 586029-3  
 586030-7  
 586031-8  
 586032-8  
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 586040-3  
 586041-20  
 586042-21  
 586043-20  
 586044-1  
 586045-3  
 586046-2  
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 586001-1  
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 586098-1  
 586099-1  
 586100-1

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Mike Couffer Add'l Person: 0 Date: 13 APRIL 2011 GPS Unit: 6

Project: Concentrix Solar Project Map #: 7 Survey Sxn: 0 QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/mph)	% CC	Sky
Start <u>1119 HRS</u>	<u>63°F</u>	<u>3-7 mph</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1200</u>	<u>62°F</u>	<u>4-9</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1300</u>	<u>62°F</u>	<u>4-7</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1400</u>	<u>61°F</u>	<u>4-7</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
<u>1500</u>	<u>60°F</u>	<u>4-10</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
End				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funealis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Steeple Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	<u>4</u>	<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)		<b>Other Butterflies:</b>	
<i>Vanessa virginensis</i> (Virginia Lady)		<u>SACHEM</u>	<u>4</u>
<i>Nymphalis californica</i> (California Tortoiseshell)		<u>Common Sootywing</u>	<u>1</u>
<b>Danaiidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Anthocharis celthura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)	<u>1</u>		
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harfordii</i> (Harford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		<u>MC WW 01</u>	
<i>Papilio eurymedon</i> (Pale Swallowtail)		<u>MC WW 02</u>	
<i>Papilio rutulus</i> (Western Tiger Swallowtail)		<u>MC WW 03</u>	
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	<u>4</u>		
<b>Lycaenidae (Hastrea and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icarla acmon</i> (Acmon Blue)	<u>3</u>		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Efin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

▶ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

◦ <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
◦ <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
◦ <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
◦ <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
◦ <i>Boechera</i> sp.	Rock Cress
◦ <i>Calandrinia ciliata</i>	Red Maids
◦ <i>Calochortus concolor</i>	Golden-bowl Manposia Lily
◦ <i>Celystegia longipes</i>	Morning-glory
◦ <i>Carrissonia</i> sp.	Sun Cup
◦ <i>Castilleja exerta</i>	Paintbrush
◦ <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
◦ <i>Caulanthus simulans</i>	Payson's Caulanthus
◦ <i>Ceanothus cuneatus</i>	Buck Brush
◦ <i>Ceanothus greggii</i>	Cup-leaf-lilac
◦ <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
◦ <i>Chaenactis artemisiifolia</i>	White Pincushion
◦ <i>Chaenactis glabriuscula</i>	Yellow Pincushion
◦ <i>Clematis</i> sp.	Clematis
◦ <i>Collinsia concolor</i>	Southern Chinese Houses
◦ <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
◦ <i>Coreopsis californica</i>	California Coreopsis
◦ <i>Corethrogyne filaginifolia</i>	Common Sand-aster
◦ <i>Cryptantha</i> sp.	Cryptantha
◦ <i>Cucurbita foetidissima</i>	Calabazilla
◦ <i>Descurainia</i> sp.	Tansy-mustard
◦ <i>Dicentra chrysantha</i>	Golden Ear-drops
◦ <i>Dichelostemma capitatum</i>	Blue Dicks
◦ <i>Dudleya</i> sp.	Dudleya
◦ <i>Emmenanthe pendulifera</i>	Whispering Bells
◦ <i>Eriastrum</i> sp.	Woolly-star
◦ <i>Ericameria</i> sp.	Goldenbush
◦ <i>Erigeron foliosus</i>	Leafy Daisy
◦ <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
◦ <i>Erigonum fasciculatum</i>	Inland California Buckwheat
◦ <i>Erigonum</i> sp.	Buckwheat
◦ <i>Eriophyllum</i> sp.	Golden-yarrow
◦ <i>Erodium cicutarium</i>	Red-stem Storksbill
◦ <i>Erysimum capitatum</i>	Western Wallflower
◦ <i>Eschscholzia californica</i>	California Poppy
◦ <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
◦ <i>Euthamia occidentalis</i>	Western Goldenrod
◦ <i>Garrya veatchii</i>	Canyon Silk Tassel
◦ <i>Gilia</i> sp.	Gilia
◦ <i>Gnaphalium</i>	Cudweed
◦ <i>Guillemia lasiophylla</i>	California Mustard
◦ <i>Gutierrezia sarothrae</i>	Broom Matchweed
◦ <i>Heliotropium curassavicum</i>	Salt Heliotrope
◦ <i>Hirschfeldia incana</i>	Short-pod Mustard
◦ <i>Lamium simplexicaule</i>	Henbit
◦ <i>Lasthenia gracilis</i>	Common Goldfields
◦ <i>Layia glandulosa</i>	White Layia
◦ <i>Lepidium</i> sp.	Pepperweed
◦ <i>Linanthus bellus</i>	Desert Beauty
◦ <i>Linanthus dichotomus</i>	Evening Snow
◦ <i>Lonicera subspicata</i>	Johnston's Honeysuckle
◦ <i>Malacothrix californica</i>	California Dandelion
◦ <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
◦ <i>Marrubium macrocarpum</i>	Wild-cucumber
◦ <i>Marrubium vulgare</i>	Horehound
◦ <i>Matricaria matricarioides</i>	Common Pineapple-weed
◦ <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
◦ <i>Microsteris gracilis</i>	Slender Phlox
◦ <i>Mimulus</i> sp.	Monkeyflower
◦ <i>Namophila menziesii</i>	Small-flower Baby Blue Eyes
◦ <i>Orobanchie bulbosa</i>	Chaparral Broom-rape

◦ <i>Osmadenia tonella</i>	Osmadenia
◦ <i>Paeonia californica</i>	California Peony
◦ <i>Pectocarya</i> sp.	Pectocarya
◦ <i>Phacelia</i> sp.	Phacelia
◦ <i>Pholistoma membranaceum</i>	White Fiesta Flower
◦ <i>Plagiobothrys</i> sp.	Popcornflower
◦ <i>Plantago patagonica</i>	Desert Plantain
◦ <i>Platystemon californicus</i>	Cream Cups
◦ <i>Prunus ilicifolia</i>	Holly-leaf Cherry
◦ <i>Rafinesquia neomexicana</i>	Desert Chicory
◦ <i>Ribes quercetorum</i>	Oak Gooseberry
◦ <i>Rorippa nasturtium-aquaticum</i>	Water-cress
◦ <i>Rosa californica</i>	California Rose
◦ <i>Saltugilia australis</i>	Southern Gilia
◦ <i>Senecio californicus</i>	California Butterweed
◦ <i>Senecio flaccidus</i>	Butterweed
◦ <i>Sidalcea melvaeflora</i>	Checker-bloom
◦ <i>Sisymbrium</i> sp.	Tumble Mustard
◦ <i>Solidago californica</i>	California Goldenrod
◦ <i>Stachys ajugoides</i>	Hedge-nettle
◦ <i>Stephanomeria</i> sp.	Wreathplant
◦ <i>Streptanthus campestris</i>	Southern Jewelflower
◦ <i>Stylocine gnaphalioides</i>	Evertasting Nest-straw
◦ <i>Tetradymia comosa</i>	Cotton-thorn
◦ <i>Thysanocarpus</i> sp.	Fringepod
◦ <i>Trichostema parishii</i>	Mountain Bluecurls
◦ <i>Tropidocarpum gracile</i>	Slender Dobie-pod
◦ <i>Uropappus lindleyi</i>	Silver Puffs
◦ <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:



# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: MINE COUFFER Add'l Person:                      Date: 14 April, 2011 GPS Unit: 17

Project: Concentrix Solar Project Map #: 7 Survey Sxn:                      QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F)	Wind (avg/max)	% CC	Clouds	precip	overcast	drizzle	showers
Start 0845 HRS	60	1-2 mph	0	clear	0	0	0	0
0900 HRS	61	0-1	0	clear	0	0	0	0
1000 HRS	63	0-2	0	clear	0	0	0	0
1100 HRS	66	0-2	0	clear	0	0	0	0
1200 HRS	68	0-4	0	clear	0	0	0	0
1300 HRS	72	0-3	0	clear	0	0	0	0
End 1400 HRS	73	0-2	0	clear	0	0	0	0

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis proterpius</i> (Proterpius Duskywing)	4
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia jubia</i> (Jubia Skipper)	2
<i>Junonia coenia</i> (Common Buckeye)	5	<i>Polites sabuleti</i> (Sandhill Skipper)	2
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)		CALIFORNIA SCOTSWING	3
<b>Danaidae (Milkweed Butterflies)</b>		SACHEM	5
<i>Danaus plexippus</i> (Monarch)		VANESSA SP.	2
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	1		
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)	5		
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias hectorii</i> (Harford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		END 1441 HRS, 71°F, WIND 1-5 MPH, CLEAR	
<i>Papilio eurymedon</i> (Pale Swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodiniidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	98	MCS MORTARHOLES (A SOLITARY GRINDSTONE)	
<b>Lycaenidae (Hairstreaks and Blues)</b>		MCS 01 - B.T. JACKRABBIT	
<i>Celastrina ladon</i> (Spring Azure)		<del>ARCHER</del>	
<i>Leptotes marina</i> (Marine Blue)		MCS 01 - HORNED LIZARD	
<i>Brachydium exile</i> (Western Pygmy Blue)		MCS 01 - WESTERN WHIPTAIL	
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)		MCS 02	
<i>Hemiargus ceraunus</i> (Edward's Blue)		MCS 03	
<i>Icaria acmon</i> (Acmon Blue)	8	MCS 04	
<i>Philotes sonorensis</i> (Sonoran Blue)	(WORN) 1		
<i>Callophrys augustinus</i> (Brown Elf)	1		
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)	1		
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Ailides halesus</i> (Great Purple Hairstreak)			

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

- ▶ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum cauterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum cauterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichlosteremma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Encameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Errodichyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yellow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storks-bill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lesqueria gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Slick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rompha nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Salpiglossis australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Turnip Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nast-sraw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: MINE COUFFER Add'l Person: Ø Date: 14 APRIL, 2011 GPS Unit: 120

Project: Concentrix Solar Project Map #: 6 Survey Sxn: Ø QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start <u>1500 HRS</u>	<u>71°F</u>	<u>1-5 MPH</u>	<u>Ø</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
<u>1600 HRS</u>	<u>71°F</u>	<u>Ø-2</u>	<u>Ø</u>	<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
				<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
				<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
				<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
				<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
End				<u>clear</u>	<u>patchy</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, (old roads), various nectar sources

Total		Total	
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Steeple Duskywing)	
<i>Chlosyne gebbii</i> (Gabb's Checkerspot)		<i>Pyrgus communis</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	<u>1</u>	<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	<u>1</u>		
<i>Anthocharis sara</i> (Sara Orangetip)	<u>1</u>		
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)	<u>3</u>		
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harrfordii</i> (Harrford's Sulphur)	<u>1</u>		
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		<u>MC WWO 5 WESTERN WHIPTAIL</u>	
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutilus</i> (Western Tiger Swallowtail)			
<b>Riodniade (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	<u>45</u>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)			
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys dumetorum</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

- ▶ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-Bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabruscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Long-stem Golden-yellow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Gutierrezia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirshfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium emplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasianthus gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layla
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonocera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marrubium macrocarpum</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chloery
<input type="checkbox"/> <i>Ribes quercolorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Sallugia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestriis</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Mike Couffer Add'l Person: Ø Date: 15 APRIL, 2011 GPS Unit: 6

Project: Concentrix Solar Project Map #: 6 Survey Sxn: Ø QCB Protocol Survey # 3 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>0900</u>	<u>66</u>	<u>1-5 mph</u>	<u>Ø</u>	<u>clear</u> patchy overcast drizzle shower
<u>1000</u>	<u>70</u>	<u>1-10</u>	<u>Ø</u>	<u>clear</u> patchy overcast drizzle shower
<u>1100</u>	<u>71</u>	<u>2-10</u>	<u>Ø</u>	<u>clear</u> patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
End				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Properius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)		<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)	<u>1</u>		
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harfordii</i> (Harford's Sulphur)			
<i>Nathalis iola</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		<u>MCB301 JACKRABBIT</u>	
<i>Papilio eurymedon</i> (Pale swallowtail)		<u>MCB302</u>	
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	<u>48</u>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)			
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Ailides halesus</i> (Great Purple Hairstreak)			

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

- ▶ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocarpus</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yellow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthemia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menzeisii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercolorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Roripa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajacoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: MIKE COFFEE Add'l Person: Ø Date: 18 APRIL 2011 GPS Unit: 10

Project: Concentrix Solar Project Map #: 7 Survey Sxn: Ø QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>1100 HRS</u>	<u>60°F</u>	<u>Ø → 4 mph</u>	<u>25%</u>	clear <u>patchy</u> overcast drizzle shower
<u>1200 HRS</u>	<u>68</u>	<u>Ø → 4 mph</u>	<u>Ø</u>	<u>clear</u> patchy overcast drizzle shower
<u>1300 HRS</u>	<u>72</u>	<u>Ø → 2 mph</u>	<u>40%</u>	clear <u>patchy</u> overcast drizzle shower
<u>1400 HRS</u>	<u>71</u>	<u>8 → 15 mph</u>	<u>90%</u>	clear patchy <u>overcast</u> drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
End				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Hanne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	<u>2</u>
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia jubia</i> (Jubia Skipper)	<u>15</u>
<i>Junonia coenia</i> (Common Buckeye)	<u>7</u>	<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>VANESSA SP.</i>	<u>2</u>
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbria</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthochloris sara</i> (Sara Orangetip)			
<i>Anthochloris cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurythome</i> (Orange Sulphur)			
<i>Colias harfordii</i> (Harford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>			
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)			
<b>Lycaenidae (Hairstreaks and Blues)</b>	<u>25</u>		
<i>Colastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	<u>1</u>		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys eugastinus</i> (Brown Elfin)			
<i>Callophrys perplexus</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

## Notes:

MCW001 Western Whiptail  
 WKW002 "  
 MCW003 "  
 MC0301 Black-tailed Jaywalker  
 MCH001 Horned Lizard

# Initial Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-tea-flac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Eriogonum pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriogonum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthomifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guilfenia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lanlum amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasiotheca gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menzeisii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Roripa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:



# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: MINE GUFFEE Add'l Person: Jimmy McMOLEAN Date: 20 APRIL 2011 GPS Unit: 6

Project: Concentrix Solar Project Map #: 6 Survey Sxn: 4 QCB Protocol Survey # 4 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>0930 HRS</u>	<u>64°F</u>	<u>3-6 MPH</u>	<u>5%</u>	<u>clear</u> patchy overcast drizzle shower
<u>1000 HRS</u>	<u>71</u>	<u>0-3 MPH</u>	<u>5%</u>	<u>clear</u> patchy overcast drizzle shower
<u>1100 HRS</u>	<u>73</u>	<u>0-5 MPH</u>	<u>5%</u>	<u>clear</u> patchy overcast drizzle shower
<u>1145 HRS</u>	<u>75°</u>	<u>5-9 MPH</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
End				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	1
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Steepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescons</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia jubia</i> (Jubia Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	4	<i>Pollis sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>COMMON SCOUTY WING</i>	1
<b>Danaidae (Milkweed Butterflies)</b>		<i>CHECKERSPOT SP.</i>	1
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coccytonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orange-tip)			
<i>Anthocharis cethura</i> (Felder's Orange-tip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias ourytheme</i> (Orange Sulphur)			
<i>Colias harfordii</i> (Harford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>			
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Rhodiniidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	105		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)	1		
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdenus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	5		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

Notes:

# al Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

INS:

lease Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input type="checkbox"/> <i>Anisnickia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Dasycarpha</i> sp.	Tansey-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guilfoenia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirshfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menzeisii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tonella</i>	Osmadenia
<input type="checkbox"/> <i>Paeconia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fleeta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Salpiglossis australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylodine gnaphaloides</i>	Evertasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobre-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## **RAHUS OVATA**

### Other Flowering Plants:

### Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Mine Couffer Add'l Person: Ø Date: 28 APRIL 2011 GPS Unit: Ø

Project: Concentrix Solar Project Map #: Ø Survey Sxn: Ø QCB Protocol Survey #: 5 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start 0900HRS	73°F	1→7 mph	Ø	clear	patchy	overcast	drizzle	shower
1000 HRS	84°F	Ø→2	Ø	clear	patchy	overcast	drizzle	shower
1100 HRS	84°F	Ø→1	Ø	clear	patchy	overcast	drizzle	shower
1200 HRS	79°F	3→10	Ø	clear	patchy	overcast	drizzle	shower
1300 HRS	82°F	1→5	Ø	clear	patchy	overcast	drizzle	shower
1400 HRS	79°F	3→10	Ø	clear	patchy	overcast	drizzle	shower
End 1500HRS	80°F	4→10	Ø	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	2
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gebbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	1
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	11	<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)	1	<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>PHALISORA CATULLUS</i> (Common Sootywing)	1
<b>Danaidae (Milkweed Butterflies)</b>		<i>WESTERN TAILED BLUE</i>	
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	4		
<i>Anthocharis sara</i> (Sara Orangetip)	1		
<i>Anthocharis cellura</i> (Fakler's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur)	2		
<i>Colias harrfordii</i> (Harford's Sulphur)	6		
<i>Nethalis iole</i> (Dainty Sulphur)	1		
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodiniidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	135		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exilis</i> (Western Pygmy Blue)			
<i>Glaucopsyche hydamus</i> (Southern Blue/Silvery blue)	1		
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	4		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Effin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

► Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

► **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

◦ <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
◦ <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
◦ <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
◦ <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
◦ <i>Boechera</i> sp.	Rock Cress
◦ <i>Calandrinia ciliata</i>	Red Maids
◦ <i>Calochortus concolor</i>	Golden-bowl Maniposa Lily
◦ <i>Calyptegia longipes</i>	Morning-glory
◦ <i>Camissonia</i> sp.	Sun Cup
◦ <i>Castilleja exerta</i>	Paintbrush
◦ <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
◦ <i>Caulanthus simulans</i>	Payson's Caulanthus
◦ <i>Ceanothus cuneatus</i>	Buck Brush
◦ <i>Ceanothus greggii</i>	Cup-tea-lilac
◦ <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
◦ <i>Chaenactis artemisiifolia</i>	White Pincushion
◦ <i>Chaenactis glabriuscula</i>	Yellow Pincushion
◦ <i>Clematis</i> sp.	Clematis
◦ <i>Collinsia concolor</i>	Southern Chinese Houses
◦ <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
◦ <i>Coreopsis californica</i>	California Coreopsis
◦ <i>Corethrogyne filaginifolia</i>	Common Sand-aster
◦ <i>Cryptantha</i> sp.	Cryptantha
◦ <i>Cucurbita foetidissima</i>	Calabazilla
◦ <i>Descurainia</i> sp.	Tansy-mustard
◦ <i>Dicentra chrysantha</i>	Golden Ear-drops
◦ <i>Dichelostemma capitatum</i>	Blue Dicks
◦ <i>Dudleya</i> sp.	Dudleya
◦ <i>Emmenanthe pendulifera</i>	Whispering Bells
◦ <i>Eriastrum</i> sp.	Woolly-star
◦ <i>Ericameria</i> sp.	Goldenbush
◦ <i>Erigeron foliosus</i>	Leafy Daisy
◦ <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
◦ <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
◦ <i>Eriogonum</i> sp.	Buckwheat
◦ <i>Eriophyllum</i> sp.	Golden-yarrow
◦ <i>Erodium cicutarium</i> *	Red-stem Storksbill
◦ <i>Erysimum capitatum</i>	Western Wallflower
◦ <i>Eschscholzia californica</i>	California Poppy
◦ <i>Eucryphia chrysanthemifolia</i>	Spotted Hideseed
◦ <i>Euthamia occidentalis</i>	Western Goldenrod
◦ <i>Garrya veatchii</i>	Canyon Silk Tassel
◦ <i>Gilia</i> sp.	Gilia
◦ <i>Gnaphalium</i>	Cudweed
◦ <i>Guillemia lasiophylla</i>	California Mustard
◦ <i>Gutierrezia sarothrae</i>	Broom Matchweed
◦ <i>Heliobolus curassavicum</i>	Salt Heliotrope
◦ <i>Hirschfeldia incana</i>	Short-pod Mustard
◦ <i>Lamium amplexicaule</i>	Henbit
◦ <i>Lasthenia gracilis</i>	Common Goldfields
◦ <i>Layia glandulosa</i>	White Layia
◦ <i>Lepidium</i> sp.	Pepperweed
◦ <i>Linanthus bellus</i>	Desert Beauty
◦ <i>Linanthus dichotomus</i>	Evening Snow
◦ <i>Lonicera subspicata</i>	Johnston's Honeysuckle
◦ <i>Malacothrix californica</i>	California Dandelion
◦ <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
◦ <i>Marah macrocarpus</i>	Wild-cucumber
◦ <i>Marrubium vulgare</i> *	Horhound
◦ <i>Matricaria matricarioides</i> *	Common Pineapple-weed
◦ <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
◦ <i>Microsteris gracilis</i>	Slender Phlox
◦ <i>Mimulus</i> sp.	Monkeyflower
◦ <i>Namophila menziesii</i>	Small-flower Baby Blue Eyes
◦ <i>Orobancha bulbosa</i>	Chaparral Broom-rape

◦ <i>Osmadenia tenella</i>	Osmadenia
◦ <i>Paeonia californica</i>	California Peony
◦ <i>Pectocarya</i> sp.	Pectocarya
◦ <i>Phacelia</i> sp.	Phacelia
◦ <i>Pholistoma membranaceum</i>	White Fleeta Flower
◦ <i>Plagiobothrys</i> sp.	Popcornflower
◦ <i>Plantago patagonica</i>	Desert Plantain
◦ <i>Platystemon californicus</i>	Cream Cups
◦ <i>Prunus ilicifolia</i>	Holly-leaf Cherry
◦ <i>Rafinesquia neomexicana</i>	Desert Chicory
◦ <i>Ribes quercolorum</i>	Oak Gooseberry
◦ <i>Rompa nasturtium-aquaticum</i>	Water-cress
◦ <i>Rosa californica</i>	California Rose
◦ <i>Salpiglossa australis</i>	Southern Gilia
◦ <i>Senecio californicus</i>	California Butterweed
◦ <i>Senecio flaccidus</i>	Butterweed
◦ <i>Sidalcea malvaeflora</i>	Checker-bloom
◦ <i>Sisymbrium</i> sp.	Tumble Mustard
◦ <i>Solidago californica</i>	California Goldenrod
◦ <i>Stachys ajugoides</i>	Hedge-nettle
◦ <i>Stephanomeria</i> sp.	Wreathplant
◦ <i>Streptanthus campestris</i>	Southern Jewelflower
◦ <i>Stylocine gnaphaloides</i>	Everlasting Nest-staw
◦ <i>Tetradymia comosa</i>	Cotton-thorn
◦ <i>Thysanocarpus</i> sp.	Fringepod
◦ <i>Trichostema parishii</i>	Mountain Bluecurls
◦ <i>Tropidocarpum gracile</i>	Slender Doble-pod
◦ <i>Uropappus lindleyi</i>	Silver Puffs
◦ <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

**RHUS OVATA**

**SUGAR BUSH**

## Rare Wildlife or Rare Plants:

◦ MICRTHA NEST	WITH LARGE WHITE NESTING
◦ MCB301	BLACK-TAILED JACKRABBIT
◦ MCB302	"
◦ MCB303	"
◦ MCWW01	COASTAL WESTERN WHIPTAIL
◦ MCWW02	"
◦ MCWW03	"
◦ MCWW04	"
◦ MCWW05	"
◦ MCWW06	"
◦ MCWW07	"
◦ MCWW08	"
◦ MCWW09	"
◦ MCWW10	"
◦ MCWW11	"

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Margie Mulligan Add'l Person: \_\_\_\_\_ Date: 5.2.11 GPS Unit: personal

Project: Concentrix Solar Project Map #: 7 Survey Sxn: \_\_\_\_\_ QCB Protocol Survey #: 6 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>0900</u>	<u>64°F</u>	<u>4-8 (13)</u>	<u>0</u>	<u>Clear</u> patchy overcast drizzle shower
<u>1200</u>	<u>70°F</u>	<u>4-11 (13)</u>	<u>0</u>	<u>Clear</u> patchy overcast drizzle shower
				<u>Clear</u> patchy overcast drizzle shower
				<u>Clear</u> patchy overcast drizzle shower
				<u>Clear</u> patchy overcast drizzle shower
				<u>Clear</u> patchy overcast drizzle shower
				<u>Clear</u> patchy overcast drizzle shower
End				<u>Clear</u> patchy overcast drizzle shower

Habitat On-site (circle): open soils, hillsides, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	<u>1</u>
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia jubia</i> (Jubia Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	<u>1</u>	<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harrfordii</i> (Harford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	<u>1</u>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaris acmon</i> (Acmon Blue)	<u>11</u>		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

essential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Locations:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS**

See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

- ☒ *Amsinckia menziesii*
- ☐ *Antirrhinum coulterianum*
- ☐ *Antirrhinum nuttallianum*
- ☐ *Asclepias fascicularis*
- ☒ *Boechera* sp.
- ☐ *Calandrinia ciliata*
- ☐ *Calochortus concolor*
- ☐ *Calystegia longipes*
- ☒ *Ceanothus* sp.
- ☐ *Castilleja exerta*
- ☐ *Caulanthus heterophyllus*
- ☐ *Caulanthus simulans*
- ☐ *Ceanothus cuneatus*
- ☐ *Ceanothus greggii*
- ☐ *Ceanothus leucodermis*
- ☐ *Chaenactis artemisiifolia*
- ☒ *Chaenactis glabriuscula*
- ☐ *Clematis* sp.
- ☐ *Collinsia concolor*
- ☐ *Cordylanthus rigidus*
- ☒ *Coreopsis californica*
- ☐ *Corethrogyne filaginifolia*
- ☒ *Cryptantha* sp.
- ☐ *Cucurbita foetidissima*
- ☒ *Descurainia* sp.
- ☐ *Dicentra chrysantha*
- ☐ *Dichelostemma capitatum*
- ☐ *Dudleya* sp.
- ☐ *Emmenanthe pendulifera*
- ☐ *Eriogonum* sp.
- ☒ *Ericameria* sp.
- ☐ *Eriogonum foliosum*
- ☐ *Eriodictyon trichocalyx*
- ☐ *Eriogonum fasciculatum*
- ☐ *Eriogonum* sp.
- ☒ *Eriophyllum* sp.
- ☒ *Erodium cicutarium*
- ☐ *Erysimum capitatum*
- ☐ *Eschscholzia californica*
- ☐ *Eucrypta chrysanthemifolia*
- ☐ *Euthamia occidentalis*
- ☒ *Garrya veatchii*
- ☐ *Gilia* sp.
- ☐ *Gnaphalium*
- ☐ *Guillemia lasiophylla*
- ☐ *Gutierrezia sarothrae*
- ☐ *Heliotropium curassavicum*
- ☒ *Hirshfeldia incana*
- ☒ *Lamium amplexicaule*
- ☒ *Lasthenia gracilis*
- ☒ *Layia glandulosa*
- ☐ *Lepidium* sp.
- ☒ *Linanthus bellus*
- ☐ *Linanthus dichotomus*
- ☐ *Lonicera subspicata*
- ☐ *Malacothrix californica*
- ☐ *Malacothrix clevelandii*
- ☐ *Marah macrocarpus*
- ☐ *Marrubium vulgare*
- ☐ *Matricaria matricarioides*
- ☐ *Mentzelia veatchiana*
- ☐ *Microsteris gracilis*
- ☒ *Mimulus* sp. *aridus*
- ☐ *Nemophila menziesii*
- ☐ *Orobanche bulbosa*
- ☐ Rancher's Fiddleneck
- ☐ Coulter's Snapdragon
- ☐ Nuttall's Snapdragon
- ☐ Narrow-leaf Milkweed
- ☐ Rock Cress
- ☐ Red Maids
- ☐ Golden-bowl Mariposa Lily
- ☐ Morning-glory
- ☐ Sun Cup
- ☐ Paintbrush
- ☐ San Diego Jewelflower
- ☐ Payson's Caulanthus
- ☐ Buck Brush
- ☐ Cup-leaf-lilac
- ☐ Chaparral Whitethorn
- ☐ White Pincushion
- ☐ Yellow Pincushion
- ☐ Clematis
- ☐ Southern Chinese Houses
- ☐ Dark-tip Bird's Beak
- ☐ California Coreopsis
- ☐ Common Sand-aster
- ☐ Cryptantha
- ☐ Calabazilla
- ☐ Tansy-mustard
- ☐ Golden Ear-drops
- ☐ Blue Dicks
- ☐ Dudleya
- ☐ Whispering Bells
- ☐ Woolly-star
- ☐ Goldenbush
- ☐ Leafy Daisy
- ☐ Hairy Yerba Santa
- ☐ Inland California Buckwheat
- ☐ Buckwheat
- ☐ Golden-yarrow
- ☐ Red-stem Storkbill
- ☐ Western Wallflower
- ☐ California Poppy
- ☐ Spotted Hideseed
- ☐ Western Goldenrod
- ☐ Canyon Silk Tassel
- ☐ Gilia
- ☐ Cudweed
- ☐ California Mustard
- ☐ Broom Matchweed
- ☐ Salt Heliotrope
- ☐ Short-pod Mustard
- ☐ Henbit
- ☐ Common Goldfields
- ☐ White Layia
- ☐ Pepperweed
- ☐ Desert Beauty
- ☐ Evening Snow
- ☐ Johnston's Honeysuckle
- ☐ California Dandelion
- ☐ Cleveland's Malacothrix
- ☐ Wild-cucumber
- ☐ Horehound
- ☐ Common Pineapple-weed
- ☐ Veatch's Stick-leak
- ☐ Slender Phlox
- ☐ Monkeyflower
- ☐ Small-flower Baby Blue Eyes
- ☐ Chaparral Broom-rape

- ☐ *Osmadenia tenella*
- ☐ *Paeonia californica*
- ☐ *Pectocarya* sp.
- ☒ *Phacelia* sp.
- ☒ *Pholistoma membranaceum*
- ☐ *Plagiolobos* sp.
- ☐ *Plantago patagonica*
- ☐ *Platystemon californicus*
- ☐ *Prunus ilicifolia*
- ☐ *Rafinesquia neomexicana*
- ☐ *Ribes quercolorum*
- ☐ *Rorippa nasturtium-aquaticum*
- ☐ *Rosa californica*
- ☒ *Salpiglossis australis*
- ☐ *Senecio californicus*
- ☐ *Senecio flaccidus*
- ☐ *Sidalcea malvaeflora*
- ☐ *Sisymbrium* sp.
- ☐ *Solidago californica*
- ☐ *Stachys ajugoides*
- ☐ *Stephanomeria* sp.
- ☐ *Streptanthus campestris*
- ☐ *Stylocline gnaphaloides*
- ☐ *Tetradymia comosa*
- ☐ *Thysanocarpus* sp.
- ☐ *Trichostema parishii*
- ☒ *Tropidocarpum gracile*
- ☐ *Uropappus lindleyi*
- ☐ *Viola purpurea*
- ☐ *Osmadenia*
- ☐ California Peony
- ☐ Pectocarya
- ☐ Phacelia
- ☐ White Fiesta Flower
- ☐ Popcornflower
- ☐ Desert Plantain
- ☐ Cream Cups
- ☐ Holly-leaf Cherry
- ☐ Desert Chicory
- ☐ Oak Gooseberry
- ☐ Water-cress
- ☐ California Rose
- ☐ Southern Gilia
- ☐ California Butterweed
- ☐ Butterweed
- ☐ Checker-bloom
- ☐ Tumble Mustard
- ☐ California Goldenrod
- ☐ Hedge-nettle
- ☐ Wreathplant
- ☐ Southern Jewelflower
- ☐ Everlasting Nest-slaw
- ☐ Cotton-thorn
- ☐ Fringe-pod
- ☐ Mountain Bluecurls
- ☐ Slender Dobie-pod
- ☐ Silver Puffs
- ☐ Oak Yellow Violet

Other Flowering Plants:

*Peastman clevelandii*  
*Streptanthus campestris*  
*Mimulus aurantiacus aridus*  
*Mimulus*

Rare Wildlife or Rare Plants:

*Peatogramma triangularis robinsonii*  
*MIMPT01-02*  
*Peatogramma elaeagnifolia*

*Mimulus aurantiacus aridus*  
*MIMAD01-03*

*Streptanthus campestris*  
*MIMSC01-02*

*Horn Lizard*  
*MIMH01*

*Ivesia saxosa*  
*MIMSO1*

*Linanthus bellus*  
*MIMLB01-02 (7)* *MIMLB100 (6)*

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Eun Bergman Add'l Person: \_\_\_\_\_

Date: May 2, 11 GPS Unit: 11

Project: Concentrix Solar Project Map #: 7 Survey Sxn: 7

QCB Protocol Survey # Shreve of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>8:50</u>	<u>64</u>	<u>4-8 (13)</u>	<u>6</u>	<u>clear</u> patchy overcast drizzle shower
<u>9:50</u>	<u>72</u>	<u>4-9 (13)</u>	<u>2</u>	<u>clear</u> patchy overcast drizzle shower
<u>12:00</u>	<u>74</u>	<u>8-10 (13)</u>	<u>0</u>	<u>clear</u> patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
				clear patchy overcast drizzle shower
End <u>12:00</u>				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Total		Total	
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing) <u>11</u>	<u>2</u>
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	<u>1</u>	<i>Polites sabuleti</i> (Sandhill Skipper)	
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orangetip) <u>1</u>	<u>2</u>		
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harfordii</i> (Harford's Sulphur)			
<i>Nathalis iolo</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		<u>EBM's QAS</u> <u>Monarchs</u> <u>unidentified</u>	
<i>Papilio eurymedon</i> (Pale Swallowtail)		<u>(got windy)</u>	
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark) <u>1</u>	<u>2</u>		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)			
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

# Essential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia monziesii</i>	Rancher's Fiddleneck
<input checked="" type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input checked="" type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input checked="" type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Coarctothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Coarctothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Coarctothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthomifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Moneysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marrubium macrocarpum</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Slick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiolobos</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercolorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input checked="" type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio illececidus</i>	Butterweed
<input type="checkbox"/> <i>Sidacea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Turnip Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input checked="" type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Totradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

Quino end noon 12:00  
(high wind)  
Start Botany survey  
12:20

## Rare Wildlife or Rare Plants:

EBAD01A1	EBdp10A1
EBAD02E18	EBdp11A2
EBAD01B5	EBdp12A1
EBAD02A1	EBdp13A1
EBAD03A2	EBdp14A1
EBAD04A1	EBdp15B5
EBAD05A1	EBdp16A1
EBAD06A1	EBgv01A3
EBAD07A5	EBgv02A3
EBAD08A3	EBgv03A1
EBAD09A5	EBgv04B1
	EBgv05A1
	EBgv06A2



# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Margie Mulligan Add'l Person: \_\_\_\_\_

Date: 5.3.11 GPS Unit: 7

Project: Concentrix Solar Project Map #: 7 Survey Sxn: \_\_\_\_\_

QCB Protocol Survey # 6 of 5

TIME (24-hour)	Temp (°F)	Wind (avg/max)	% CC	Sky				
Start <u>0900</u>	<u>75°</u>	<u>2-5</u>	<u>0</u>	<u>clear</u>	<u>partly</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
<u>1230</u>	<u>78°</u>	<u>3-6</u>	<u>0</u>	<u>clear</u>	<u>partly</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
<u>1200</u>	<u>80°</u>	<u>2-4</u>	<u>0</u>	<u>clear</u>	<u>partly</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
<u>1500</u>	<u>83°</u>	<u>2-4</u>	<u>0</u>	<u>clear</u>	<u>partly</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>
End				<u>clear</u>	<u>partly</u>	<u>overcast</u>	<u>drizzle</u>	<u>shower</u>

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Nymphalidae (Brushfooted Butterflies)		Total
<i>Euphydryas editha</i> (Quino Checkerspot)		
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		
<i>Thessalia leanira</i> (Wright's Checkerspot)		
<i>Chlosyne californica</i> (California Patch)		
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		
<i>Phyciodes mylitta</i> (Mylitta Crescent)		
<i>Junonia coenia</i> (Common Buckeye)		
<i>Vanessa annabella</i> (West Coast Lady)		
<i>Vanessa atalanta</i> (Red Admiral)		
<i>Vanessa cardui</i> (Painted Lady)		
<i>Vanessa virginiensis</i> (Virginia Lady)		
<i>Nymphalis californica</i> (California Tortoiseshell)		
Danaidae (Milkweed Butterflies)		Total
<i>Danaus plexippus</i> (Monarch)		
<i>Danaus gilippus</i> (Queen)		
Satyridae (Satyrs)		Total
<i>Coenonympha californica</i> (Common California Ringlet)		
Pieridae (Whites, Sulphurs)		Total
<i>Pieris rapae</i> (Cabbage White)		
<i>Pontia sisymbrii</i> (Spring White)		
<i>Pontia beckerii</i> (Baker's White)		
<i>Pontia protodice</i> (Common White)		
<i>Anthocharis sara</i> (Sara Orangetip)		
<i>Anthocharis cethura</i> (Feider's Orangetip)		
<i>Euchloe hyantis</i> (Desert Pearly Marble)		
<i>Colias eurytheme</i> (Orange Sulphur)		
<i>Colias harfordii</i> (Harford's Sulphur)		
<i>Nathalis iole</i> (Dainty Sulphur)		
Papilionidae (Swallowtails)		Total
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		
<i>Papilio eurymedon</i> (Pale swallowtail)		
<i>Papilio rutulus</i> (Western Tiger Swallowtail)		
Riodinidae (Metalmarks)		Total
<i>Apodemia mormo</i> (Behr's Metalmark)		
Lycaenidae (Hairstreaks and Blues)		Total
<i>Celastrina ladon</i> (Spring Azure)		
<i>Leptotes marina</i> (Marine Blue)		
<i>Brephidium exile</i> (Western Pygmy Blue)		
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)		
<i>Hemiargus ceraunus</i> (Edward's Blue)		
<i>Icana acmon</i> (Acmon Blue)		
<i>Philotes sonorensis</i> (Sonoran Blue)		
<i>Callophrys augustinus</i> (Brown Elfin)		
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)		
<i>Trymon melinus</i> (Gray Hairstreak)		
<i>Les halesus</i> (Great Purple Hairstreak)		
<i>Large-spotted Blue</i>		
<i>Euphydryas butterfly</i>		
<i>(bernardina)</i>		
Hesperiidae (Skippers)		Total
<i>Erynnis funeralis</i> (Funereal Duskywing)		
<i>Erynnis tristis</i> (Sad Duskywing)		
<i>Erynnis propertius</i> (Properius Duskywing)		
<i>Erynnis brizo</i> (Sleepy Duskywing)		
<i>Pyrgus albescons</i> (Checkered Skipper)		
<i>Hesperia juba</i> (Juba Skipper)		
<i>Polites sabuleti</i> (Sandhill Skipper)		
Megathymidae (Giant Skippers)		Total
<i>Megathymus yuccae</i> (Yucca Giant Skipper)		
Other Butterflies:		Total

Notes:

# Official Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

actions:

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input checked="" type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input checked="" type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input checked="" type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input checked="" type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input checked="" type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input checked="" type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input checked="" type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input checked="" type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input checked="" type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input checked="" type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input checked="" type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input checked="" type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input checked="" type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input checked="" type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input checked="" type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input checked="" type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input checked="" type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input checked="" type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input checked="" type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input checked="" type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input checked="" type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input checked="" type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input checked="" type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input checked="" type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input checked="" type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input checked="" type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input checked="" type="checkbox"/> <i>Eminanthe pendulifera</i>	Whispering Bells
<input checked="" type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input checked="" type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input checked="" type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Halcy Yerba Santa
<input checked="" type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input checked="" type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input checked="" type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yellow
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i>	Red-stem Storksbill
<input checked="" type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input checked="" type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input checked="" type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input checked="" type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input checked="" type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input checked="" type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input checked="" type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input checked="" type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input checked="" type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input checked="" type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input checked="" type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input checked="" type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input checked="" type="checkbox"/> <i>Lopidium</i> sp.	Pepperweed
<input checked="" type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input checked="" type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input checked="" type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input checked="" type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input checked="" type="checkbox"/> <i>Malacothrix cloverlandii</i>	Cleveland's Malacothrix
<input checked="" type="checkbox"/> <i>Marsh macrocarpus</i>	Wild-cucumber
<input checked="" type="checkbox"/> <i>Marrubium vulgare</i>	Horehound
<input checked="" type="checkbox"/> <i>Matricaria matricarioides</i>	Common Pineapple-weed
<input checked="" type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input checked="" type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input checked="" type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input checked="" type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input checked="" type="checkbox"/> <i>Orobancha hulbosa</i>	Chaparral Broom-rape

<input checked="" type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input checked="" type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input checked="" type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input checked="" type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input checked="" type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fresta Flower
<input checked="" type="checkbox"/> <i>Plagiobolus</i> sp.	Popcornflower
<input checked="" type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input checked="" type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input checked="" type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input checked="" type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input checked="" type="checkbox"/> <i>Ribes quercolorum</i>	Oak Gooseberry
<input checked="" type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input checked="" type="checkbox"/> <i>Rosa californica</i>	California Rose
<input checked="" type="checkbox"/> <i>Saltugilia austrelis</i>	Southern Gilia
<input checked="" type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input checked="" type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input checked="" type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input checked="" type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input checked="" type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input checked="" type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input checked="" type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input checked="" type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input checked="" type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-straw
<input checked="" type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input checked="" type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input checked="" type="checkbox"/> <i>Trichostemma parishii</i>	Mountain Bluecurls
<input checked="" type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input checked="" type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input checked="" type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

vegetative *Encelia californica*  
*Pinus oregon*

## Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Bonnie Hendricks Add'l Person: \_\_\_\_\_ Date: 5/4/11 GPS Unit: 2  
 Project: Concentrix Solar Project Map #: 6 Survey Sxn: 6 QCB Protocol Survey #: 6 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start 11:50	84.5	3.3/5.6	0	clear patchy overcast drizzle shower
12:45	88.2	4.1/6.3	0	clear patchy overcast drizzle shower
1:40	89.5	5.2/7.8	0	clear patchy overcast drizzle shower
2:30	95.0	1.2/3.0	0	clear patchy overcast drizzle shower
3:30	94.5	3.1/5.2	0	clear patchy overcast drizzle shower
End 4:00	94.0	4.2/6.9	0	clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funealis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Menne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia ianira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus altheus</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	11	<i>Polites sabuleti</i> (Sandhill Skipper)	1
<i>Vanessa annabella</i> (West Coast Lady)	7	<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)		<b>Other Butterflies:</b>	
<i>Vanessa virginiensis</i> (Virginia Lady)			
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b> Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	11		
<i>Anthocharis sara</i> (Sara Orangetip)	3		
<i>Anthocharis cethura</i> (Felder's Orangetip)	1		
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur)	1		
<i>Colias harfordii</i> (Harford's Sulphur)	10		
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)	1		
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Bahr's Metalmark)	12		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiargus cearanus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	11		
<i>Philotes sonorensis</i> (Sonoran Blue)	3		
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Allides halesus</i> (Great Purple Hairstreak)			

# ntial Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Halcyon Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasianthus gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lopidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobolus</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Ronipa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Turnip Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

## Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: K.H. Osborne Add'l Person: [Signature] Date: 4/26/2011 GPS Unit: 10

Project: Concentrix Solar Project Map #: \_\_\_\_\_ Survey Sxn: \_\_\_\_\_ QCB Protocol Survey # \_\_\_\_\_ of \_\_\_\_\_ 5

TIME (24-hour)		Temp (F°)	Wind (avg/max)	% CC	Sky				
Start	935	64	3/5	0	<del>clear</del>	patchy	overcast	drizzle	shower
	1045	67	4/7	0	<del>clear</del>	patchy	overcast	drizzle	shower
	1200	70	1/8	0	clear	patchy	overcast	drizzle	shower
					clear	patchy	overcast	drizzle	shower
	145	71	2/5	0	<del>clear</del>	patchy	overcast	drizzle	shower
End	210	72	3.6/5	0	<del>clear</del>	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Map 3	Map 6	Total	Map 3	Map 6	Total
<b>Nymphalidae (Brushfooted Butterflies)</b>						
Euphydryas editha (Quino Checkerspot)						
Euphydryas chalcedona (Henne's Checkerspot)						
Thessalia leanira (Wright's Checkerspot)						
Chlosyne californica (California Patch)						
Chlosyne gabbii (Gabb's Checkerspot)						
Phyciodes mylitta (Mylitta Crescent)						
Junonia coenia (Common Buckeye) IIII	III	9/3				2
Vanessa annabella (West Coast Lady)						
Vanessa atalanta (Red Admiral)						
Vanessa cardui (Painted Lady)						
Vanessa virginiensis (Virginia Lady)						
Nymphalis californica (California Tortoiseshell)						
<b>Danaidae (Milkweed Butterflies)</b>						
Danaus plexippus (Monarch)						
Danaus gilippus (Queen)						
<b>Satyridae (Satyrs)</b>						
Ceanothynpha californica (Common California Ringlet)						
<b>Pieridae (Whites, Sulphurs)</b>						
Pieris rapae (Cabbage White)						
Pontia sisymbrii (Spring White)						
Pontia beckeri (Baker's White)						
Pontia protodice (Common White) III		4				
Anthocharis sara (Sara Orangelip)						
Anthocharis cethura (Felder's Orangelip)						
Euchloe hyantis (Desert Pearly Marble) II		2				
Colias eurytheme (Orange Sulphur)	I	1				
Colias hfordii (Harford's Sulphur)						
Nathalis iole (Dainty Sulphur)						
<b>Papilionidae (Swallowtails)</b>						
Papilio polyxenes (Desert Black Swallowtail)						
Papilio eurymedon (Pale swallowtail)						
Papilio rutulus (Western Tiger Swallowtail)						
<b>Riodinidae (Metalmarks)</b>						
Apodemia normo (Behr's Metalmark) XX XXXXX	XX	80/20				
<b>Lycanidae (Hairstreaks and Blues)</b>						
Celastrina ladon (Spring Azure)						
Leptotes marina (Marine Blue)						
Brophidium exile (Western Pygmy Blue)						
Glaucopsyche lygdamus (Southern Blue/Silvery blue)						
Hemiargus ceraunus (Edward's Blue)						
Icaria acmon (Acmon Blue) IIII	III	4/3				
Philotes sonorensis (Sonoran Blue)						
Callophrys augustinus (Brown Elfin)						
Callophrys perplexa (Perplexing Green Hairstreak)						
Strymon melinus (Gray Hairstreak)						
Atides halestus (Great Purple Hairstreak) I	I	1				
<b>Hesperiidae (Skippers)</b>						
Erynnis funeralis (Funereal Duskywing)						
Erynnis tristis (Sad Duskywing)						
Erynnis proterpius (Proterpius Duskywing)						
Erynnis brizo (Sleepy Duskywing)						
Pyrgus albescens (Checkered Skipper)						
Hesperia jubja (Jubja Skipper) II						
Polites sabuleti (Sandhill Skipper)						
<b>Megathymidae (Giant Skippers)</b>						
Megathymus yuccae (Yucca Giant Skipper)						
<b>Other Butterflies:</b>						
Platygaster lupini I						1
Pholasura catallae III						3
<b>Notes:</b>						
Many aged conditions						
Landline beginning to get old						
Also collected balladyna larvae on Castilleja sp.						

# Partial Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

- ▶ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum cauleterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum cauleterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input checked="" type="checkbox"/> <i>Ceanothus greggii</i> <i>num 3, 6</i>	Cup-leaf-lilac
<input checked="" type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp. <i>num 3, 6</i>	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Belts
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Encameria</i> sp. <i>num 3, 6</i>	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i> <i>num 3, 6</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i> <i>num 3</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orbanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input checked="" type="checkbox"/> <i>Phacelia</i> sp. <i>num 3</i>	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rompa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocleto gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Talradymia cernosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostemma parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:



# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Mike Couffer Add'l Person: \_\_\_\_\_ Date: 23 April, 2011 GPS Unit: \_\_\_\_\_

Project: Concentrix Solar Project Map #: 7 Survey Sxn: 0 QCB Protocol Survey # 5 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start 0830 HRS	70°F	0 → 4 mph	0	clear	patchy	overcast	drizzle	shower
0900 HRS	72°F	0 → 4 mph	0	clear	patchy	overcast	drizzle	shower
1000 HRS	73°F	0 → 4 mph	0	clear	patchy	overcast	drizzle	shower
1100 HRS	73°F	0 → 5 mph	0	clear	patchy	overcast	drizzle	shower
1200 HRS	77°F	1 → 7 mph	0	clear	patchy	overcast	drizzle	shower
1300 HRS	76°F	2 → 8 mph	0	clear	patchy	overcast	drizzle	shower
End 1400 HRS	74°F	2 → 6 mph	0	clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

Total		Total	
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)	1	<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis proterpius</i> (Proterpius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)	1	<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	
<i>Junonia coenia</i> (Common Buckeye)	12	<i>Polites sabuleti</i> (Sandhill Skipper)	27
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)			
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>Other Butterflies:</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>Pholisora catullus</i> (Common Sootywing)	1
<b>Danaidae (Milkweed Butterflies)</b>		<i>White Checkered Skipper</i>	1
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	3		
<i>Anthocharis sara</i> (Sara Orange-tip)			
<i>Anthocharis celura</i> (Feider's Orange-tip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)	1		
<i>Colias eurytheme</i> (Orange Sulphur)	3		
<i>Colias harfordii</i> (Harford's Sulphur)			
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		END 1500 HRS, 73°F, WIND: 2-5 mph, CLEAR	
<i>Papilio eurymedon</i> (Pale swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	103		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exile</i> (Western Pygmy Blue)	1		
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hennerius ceratulus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	12		
<i>Phikotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Efin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

➤ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

➤ **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

o <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
o <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
o <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
o <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
o <i>Boechera</i> sp.	Rock Cross
o <i>Calandrinia ciliata</i>	Red Maids
o <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
o <i>Calystegia longipes</i>	Morning-glory
o <i>Camissonia</i> sp.	Sun Cup
o <i>Castilleja <del>sp.</del> <sup>subsp. <i>colorata</i></sup></i>	Paintbrush (Indian)
o <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
o <i>Caulanthus simulans</i>	Payson's Caulanthus
o <i>Ceanothus cuneatus</i>	Buck Brush
o <i>Ceanothus greggii</i>	Cup-leaf-lilac
o <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
o <i>Chaenactis artemisiifolia</i>	White Pincushion
o <i>Chaenactis glabriuscula</i>	Yellow Pincushion
o <i>Clematis</i> sp.	Clematis
o <i>Collinsia concolor</i>	Southern Chinese Houses
o <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
o <i>Coreopsis californica</i>	California Coreopsis
o <i>Corethrogyne filaginifolia</i>	Common Sand-aster
o <i>Cryptantha</i> sp.	Cryptantha
o <i>Cucurbita foetidissima</i>	Calabazilla
o <i>Descurainia</i> sp.	Tansy-mustard
o <i>Dicentra chrysantha</i>	Golden Ear-drops
o <i>Dichelostemma capitatum</i>	Blue Dicks
o <i>Dudleya</i> sp.	Dudleya
o <i>Emmananthe pendulifera</i>	Whispering Bells
o <i>Eriogonum</i> sp.	Woolly-star
o <i>Ericameria</i> sp. <b>LINCOLNIA</b>	Goldenbush
o <i>Erigeron foliosus</i>	Leafy Daisy
o <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
o <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
o <i>Eriogonum</i> sp.	Buckwheat
o <i>Eriophyllum</i> sp.	Golden-yellow
o <i>Erodium cicutarium</i>	Red-stem Storksbill
o <i>Erysimum capitatum</i>	Western Wallflower
o <i>Eschscholzia californica</i>	California Poppy
o <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
o <i>Euthamia occidentalis</i>	Western Goldenrod
o <i>Garrya veatchii</i>	Canyon Silk Tassel
o <i>Gilia</i> sp.	Gilia
o <i>Gnaphalium</i>	Cudweed
o <i>Guillemia lasiophylla</i>	California Mustard
o <i>Guillemia sarothrae</i>	Broom Matchweed
o <i>Heliotropium curassavicum</i>	Salt Heliotrope
o <i>Hirshfeldia incana</i>	Short-pod Mustard
o <i>Lamium amplexicaule</i>	Henbit
o <i>Lasienia gracilis</i>	Common Goldfields
o <i>Layia glandulosa</i>	White Layia
o <i>Lepidium</i> sp.	Pepperweed
o <i>Linanthus bellus</i>	Desert Beauty
o <i>Linanthus dichotomus</i>	Evening Snow
o <i>Lonicera subspicata</i>	Johnston's Honeysuckle
o <i>Malacothrix californica</i>	California Dandelion
o <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
o <i>Marah macrocarpus</i>	Wild-cucumber
o <i>Marrubium vulgare</i>	Horehound
o <i>Matricaria matricarioides</i>	Common Pineapple-weed
o <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
o <i>Microsteris gracilis</i>	Slender Phlox
o <i>Mimulus</i> sp.	Monkeyflower
o <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
o <i>Orobancha bulbosa</i>	Chaparral Broom-rape

o <i>Osmadenia tenella</i>	Osmadenia
o <i>Paeonia californica</i>	California Peony
o <i>Pectocarya</i> sp.	Pectocarya
o <i>Phacelia</i> sp.	Phacelia
o <i>Pholistoma membranaceum</i>	White Fiesta Flower
o <i>Plagiobothrys</i> sp.	Popcornflower
o <i>Plantago patagonica</i>	Desert Plantain
o <i>Platystemon californicus</i>	Cream-Cups
o <i>Prunus ilicifolia</i>	Holly-leaf Cherry
o <i>Rafinesquia neomexicana</i>	Desert Chicory
o <i>Ribes quercetorum</i>	Oak Gooseberry
o <i>Rorippa nasturtium-aquaticum</i>	Water-cress
o <i>Rosa californica</i>	California Rose
o <i>Salpiglossis australis</i>	Southern Gilia
o <i>Senecio californicus</i>	California Butterweed
o <i>Senecio flaccidus</i>	Butterweed
o <i>Sidalcea malvaeflora</i>	Checker-bloom
o <i>Sisymbrium</i> sp.	Tumble Mustard
o <i>Solidago californica</i>	California Goldenrod
o <i>Stachys ajugoides</i>	Hedge-nettle
o <i>Stephanomeria</i> sp.	Wreathplant
o <i>Streptanthus campestris</i>	Southern Jewelflower
o <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
o <i>Tetradymia comosa</i>	Cotton-thorn
o <i>Thysanocarpus</i> sp.	Fringepod
o <i>Trichostema parishii</i>	Mountain Bluecups
o <i>Tropidocarpum gracile</i>	Slender Dobie-pod
o <i>Uropappus lindleyi</i>	Silver Puffs
o <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

**RHUS OVATA**

**SUGAR BUSH**

**CHIA**

## Rare Wildlife or Rare Plants:

o MCLA 01	HORNED LARK
o MCBJO 1	BLACK-TAILED JACKRABBIT
o MC3 MORTARHOLES	3 MORTAR HOLES
o MC4 MORTARHOLES	4 MORTAR HOLES
o MCWW 01	COSTAL WESTERN WHIPTAIL
o MCWW 02	
o MCWW 03	MCWW 19
o MCWW 04	MCWW 20
o MCWW 05	MCWW 21
o MCWW 06	MCWW 22
o MCWW 07	MCWW 23
o MCWW 08	MCWW 24
o MCWW 09	MCWW 25
o MCWW 10	MCWW 26
o MCWW 11	MCWW 27
o MCWW 12	MCWW 28
o MCWW 13	
o MCWW 14	
o MCWW 15	
o MCWW 16	
o MCWW 17	
o MCWW 18	

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

147977 miles on site  
collected

Recorder: KH Osburn Add'l Person: M. G. Colgan Date: 4/10/2011 GPS Unit: X6

Project: Concentrix Solar Project Map #: 3 Survey Sxn: X7 QCB Protocol Survey #      of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky
Start <u>1100</u>	<u>53</u>	<u>25/54</u>	<u>100/100</u>	clear patchy <u>overcast</u> drizzle shower
<u>1252</u>	<u>67</u>	<u>5/12</u>	<u>25</u>	clear patchy <u>overcast</u> drizzle shower
				clear patchy <u>overcast</u> drizzle shower
				clear patchy <u>overcast</u> drizzle shower
				clear patchy <u>overcast</u> drizzle shower
End <u>2000</u>	<u>69</u>	<u>10/19</u>	<u>30</u>	clear patchy <u>overcast</u> drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)		<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thossalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper) //	2
<i>Junonia coenia</i> (Common Buckeye) <u>1111</u>	5	<i>Polites sabulosa</i> (Sandhill Skipper) <u>XX</u>	20
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)		<b>Other Butterflies:</b>	
<i>Vanessa virginiensis</i> (Virginia Lady)		<u>(Moths)</u>	
<i>Nymphalis californica</i> (California Tortoiseshell)		<i>Euclyptus fulva</i>	1
<b>Danaidae (Milkweed Butterflies)</b>		<i>Heliothis belladonna</i>	2
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White) /	1		
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur) /	1		
<i>Colias harfordii</i> (Harford's Sulphur) /	1		
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>			
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pate swallowtail)			
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodamia mormo</i> (Behr's Metalmark) <u>1111</u>	7		
<b>Lycenidae (Hairstreaks and Blues)</b>			
<i>Calastria laron</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exilis</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)			
<i>Hemiarctus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)			
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Elfin)			
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)			
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			

Notes:

Too cold, fog & overcast @ 940 - @ 950?

Bayou area? @ 11 AM  
50% clouds, warm

Good conditions w/ many butterflies  
11 am - 1:30 pm  
Ending early due to weather

# al Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

ions

Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coufertianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia monziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coufertianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Cernisioia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-teal-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelosytemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Belts
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon litchocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirshfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Leschenia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linnanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linnanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horsetrout
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microseris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menzeisii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Flesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Greatn Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-teaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Roripa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Sailugilia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostemma parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Uropeppus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Evan Bergman Add'l Person: Osborn Date: 4.5.11 GPS Unit: 6  
 Project: Concentrix Solar Project Map #: 1153 Survey Sxn: 1153 QCB Protocol Survey # 1153 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	NOC	Sky
Start <u>9:30</u>				clear patchy overcast drizzle shower
<u>11:53</u>	<u>75</u>	<u>2-4</u>	<u>0</u>	clear patchy overcast drizzle shower
<u>12</u>	<u>77</u>	<u>2-5</u>	<u>0</u>	clear patchy overcast drizzle shower
<u>1:00</u>	<u>80</u>	<u>2-5</u>	<u>0</u>	clear patchy overcast drizzle shower
<u>2:00</u>	<u>80</u>	<u>2-5</u>	<u>0</u>	clear patchy overcast drizzle shower
<u>3:00</u>	<u>79</u>	<u>2-5</u>	<u>0</u>	clear patchy overcast drizzle shower
End				clear patchy overcast drizzle shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	1
<i>Euphydryas chalcedona</i> (Hanna's Checkerspot)	1	<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Propertius Duskywing)	1
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescens</i> (Checkered Skipper)	1
<i>Phyciodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Juba Skipper)	2
<i>Junonia coenia</i> (Common Buckeye)	1	<i>Polites sabuleti</i> (Sandhill Skipper)	4
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)		<b>Other Butterflies:</b>	
<i>Vanessa virginiensis</i> (Virginia Lady)		<i>Duskywing</i>	1
<i>Nymphalis californica</i> (California Tortoiseshell)			
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckerii</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)	3		
<i>Anthocharis sara</i> (Sara Orange-tip)	1		
<i>Anthocharis cethura</i> (Felder's Orange-tip)	1		
<i>Euchloe hyantis</i> (Desert Pearly Marble)	1		
<i>Colias eurytheme</i> (Orange Sulphur)	1		
<i>Colias harfordii</i> (Harford's Sulphur)	1		
<i>Nathalis iole</i> (Dainty Sulphur)	1		
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)		ANNU	LEGO
<i>Papilio eurymedon</i> (Pale Swallowtail)		DATI	HOSP
<i>Papilio rutulus</i> (Western Tiger Swallowtail)		USST	RTHA
<b>Riodinidae (Metalmarks)</b>		WIWA	GBHE
<i>Apodemia mormo</i> (Behr's Metalmark)	1	CALT	GRWA
<b>Lycaenidae (H Hairstreaks and Blues)</b>		CAGU	LISP
<i>Celastrina ladon</i> (Spring Azure)		CATH	AMCR
<i>Leptotes marina</i> (Marine Blue)		CORA	SAPH
<i>Brephidium exilo</i> (Western Pygmy Blue)	2	LEME	WTSW
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)		ORWA	WEKI
<i>Hemiargus ceraunus</i> (Edward's Blue)		WESP	BLGR
<i>Icaria acmon</i> (Acmon Blue)	3	ACWD	LASP
<i>Philoetes sonorensis</i> (Sonoran Blue)	1	ATEL	HOLA
<i>Callophrys augustinus</i> (Brown Effin)		BUSH	WBNU
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)	5	BWBL	SAYS
<i>Styrmon melinus</i> (Gray Hairstreak)		RASP	
<i>Allides halesus</i> (Great Purple Hairstreak)		BGBN	

AUDUBON'S CORONET  
 BLACK-TAILED JACKRABBIT  
 CA GRASS SQUIRREL  
 GRASS SPINY LIZARD  
 SIDE-BLONDED LIZARD

# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera sp.</i>	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia sp.</i>	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Cup Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis sp.</i>	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input checked="" type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha sp.</i>	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia sp.</i>	Tansy-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya sp.</i>	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum sp.</i>	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria sp.</i>	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Intal California Buckwheat
<input type="checkbox"/> <i>Eriogonum sp.</i>	Buckwheat
<input type="checkbox"/> <i>Eriophyllum sp.</i>	Golden-yellow
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i>	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschschotzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia sp.</i>	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input checked="" type="checkbox"/> <i>Hirshfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthonia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium sp.</i>	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i>	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i>	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-teak
<input type="checkbox"/> <i>Microstems gracilis</i>	Stender Phlox
<input type="checkbox"/> <i>Mimulus sp.</i>	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input checked="" type="checkbox"/> <i>Pectocarya sp.</i>	Pectocarya
<input checked="" type="checkbox"/> <i>Phacelia sp.</i>	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys sp.</i>	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Saltugilia australis</i>	Southern Gilia
<input checked="" type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium sp.</i>	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria sp.</i>	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestri</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocine gnapthaloides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia canosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus sp.</i>	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Dobie-pod
<input type="checkbox"/> <i>Viola purpurea</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

- Lupinus bicolor*
- C. intermedia*
- Brassica napus*
- Lupinus caninus* - *bagalis lupinus*
- Penstemon*
- Tauschia arguta*
- Lomatium dasycarpum*
- Hulsea californica*
- Rare Wildlife or Rare Plants:

EBLBD1 - 1	EBLBD1 - 5
EBAD01 - 1 (plant area)	EBLBD2 - 5
EBAD02 - 13 (with T)	EBLBD3 - 5
EBBD01 - 1 area	EBH01 - 1
EBBD02 - 1 area	EBGUS01 - 3
EBBD03 - 1 area	EBGUS02 - 3
EBAD04 - 1	EBGUS03 - 30
EBAD05 - 1	EBLBD03 - 10
EBAD06 - 2	EBGUS04 - 2
EBAD07 - 2	EBAD08 - 1
EBAD08 - 2	EBAD09 - 2
EBAD09 - 1	EBHCD1 - 1
EBAD10 - 1	EBB04 - 5
EBAD11 - 1	EBLBD05 - 3
EBAD12 - 1	EBLBD06 - 30
EBAD13 - 1	EBLBD07 - 6
EBAD14 - 1	EBGUS012 - 2
EBAD15 - 1	EBGUS013 - 2
EBAD16 - 1	EBGUS014 - 75
EBAD17 - 1	EBGUS015 - 2
EBAD18 - 1	
EBAD19 - 1	
EBAD20 - 1	
EBAD21 - 1	
EBAD22 - 1	
EBAD23 - 1	
EBAD24 - 1	
EBAD25 - 1	
EBAD26 - 1	
EBAD27 - 1	
EBAD28 - 1	
EBAD29 - 1	
EBAD30 - 1	

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Mike Couffer Add'l Person:                      Date: 26 April, 2011 GPS Unit: 11

Project: Concentrix Solar Project Map #:                      Survey Sxn: 0 QCB Protocol Survey #                      of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start 1230 HRS	76°F	0-3 mph	0	clear	patchy	overcast	drizzle	shower
1300 HRS	77°F	0	0	clear	patchy	overcast	drizzle	shower
1400 HRS	80°F	0-1 mph	0	clear	patchy	overcast	drizzle	shower
1500 HRS	78°F	2-6 mph	0	clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
End				clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

	Total		Total
<b>Nymphalidae (Brushfooted Butterflies)</b>		<b>Hesperiidae (Skippers)</b>	
<i>Euphydryas editha</i> (Quino Checkerspot)		<i>Erynnis funeralis</i> (Funereal Duskywing)	1
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)	2	<i>Erynnis tristis</i> (Sad Duskywing)	
<i>Thessalia leanira</i> (Wright's Checkerspot)		<i>Erynnis propertius</i> (Properius Duskywing)	
<i>Chlosyne californica</i> (California Patch)		<i>Erynnis brizo</i> (Sleepy Duskywing)	
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)		<i>Pyrgus albescent</i> (Checkered Skipper)	
<i>Phycodes mylitta</i> (Mylitta Crescent)		<i>Hesperia juba</i> (Jub's Skipper)	3
<i>Junonia coenia</i> (Common Buckeye)	12	<i>Polites sabuleli</i> (Sandhill Skipper)	8
<i>Vanessa annabella</i> (West Coast Lady)		<b>Megathymidae (Giant Skippers)</b>	
<i>Vanessa atalanta</i> (Red Admiral)		<i>Megathymus yuccae</i> (Yucca Giant Skipper)	
<i>Vanessa cardui</i> (Painted Lady)	1	<b>Other Butterflies:</b>	
<i>Vanessa virginiensis</i> (Virginia Lady)		<b>PHOLISORA CATULLUS (Common Sootywing)</b>	
<i>Nymphalis californica</i> (California Tortoiseshell)		<b>NORTHERN WHITE-SKIPPER</b>	2
<b>Danaidae (Milkweed Butterflies)</b>			
<i>Danaus plexippus</i> (Monarch)			
<i>Danaus gilippus</i> (Queen)			
<b>Satyridae (Satyrs)</b>			
<i>Coenonympha californica</i> (Common California Ringlet)			
<b>Pieridae (Whites, Sulphurs)</b>			
<i>Pieris rapae</i> (Cabbage White)			
<i>Pontia sisymbrii</i> (Spring White)			
<i>Pontia beckeri</i> (Baker's White)			
<i>Pontia protodice</i> (Common White)			
<i>Anthocharis sara</i> (Sara Orangetip)			
<i>Anthocharis cethura</i> (Felder's Orangetip)			
<i>Euchloe hyantis</i> (Desert Pearly Marble)			
<i>Colias eurytheme</i> (Orange Sulphur)			
<i>Colias harfordii</i> (Harford's Sulphur)	1		
<i>Nathalis iole</i> (Dainty Sulphur)			
<b>Papilionidae (Swallowtails)</b>		<b>Notes:</b>	
<i>Papilio polyxenes</i> (Desert Black Swallowtail)			
<i>Papilio eurymedon</i> (Pale swallowtail)	2		
<i>Papilio rutulus</i> (Western Tiger Swallowtail)			
<b>Riodinidae (Metalmarks)</b>			
<i>Apodemia mormo</i> (Behr's Metalmark)	80		
<b>Lycaenidae (Hairstreaks and Blues)</b>			
<i>Celastrina ladon</i> (Spring Azure)			
<i>Leptotes marina</i> (Marine Blue)			
<i>Brephidium exilis</i> (Western Pygmy Blue)			
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)	1		
<i>Hemiargus ceraunus</i> (Edward's Blue)			
<i>Icaria acmon</i> (Acmon Blue)	2		
<i>Philotes sonorensis</i> (Sonoran Blue)			
<i>Callophrys augustinus</i> (Brown Efin)	1		
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)	1		
<i>Strymon melinus</i> (Gray Hairstreak)			
<i>Atides halesus</i> (Great Purple Hairstreak)			



# Potential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

## Instructions:

► Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

► **PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC *Collinsia concolor* = CC *Cordylanthus rigidus* = CR *Plantago patagonica* = PP

<input type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Celandrina ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exarata</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input type="checkbox"/> <i>Chaenactis glabruscula</i>	Yellow Pincushion
<input type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Coralbrogyna filaginifolia</i>	Common Sand-aster
<input type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input type="checkbox"/> <i>Descurainia</i> sp.	Tansey-mustard
<input type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input type="checkbox"/> <i>Encarnia</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input type="checkbox"/> <i>Erodolcyon trichocalyx</i>	Hairy Yerba Santa
<input type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input type="checkbox"/> <i>Gerya veatchii</i>	Canyon Silk Tassel
<input type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Guillemia lasiophylla</i>	California Mustard
<input type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input type="checkbox"/> <i>Lasbania gracilis</i>	Common Goldfields
<input type="checkbox"/> <i>Lavia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobancha bulbosa</i>	Chaparral Broomrape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input type="checkbox"/> <i>Phacelia</i> sp.	Phacelia
<input type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream-Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Sallugia australis</i>	Southern Gilia
<input type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input type="checkbox"/> <i>Stylocline gnaphalioides</i>	Everlasting Nest-staw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Double-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

**RHUS OVATA**

**SUGAR BUSH**

## Rare Wildlife or Rare Plants:

<input type="checkbox"/> MCWW01	COASTAL WESTERN WHIPTAIL
<input type="checkbox"/> MCWW02	"
<input type="checkbox"/> MCWW03	"
<input type="checkbox"/> MCWW04	"
<input type="checkbox"/> MCWW05	"
<input type="checkbox"/> MCWW06	"
<input type="checkbox"/> MCWW07	"
<input type="checkbox"/> MCSTGN01 (PAIR)	BLACK-TAILED GNATCATCHER
<input type="checkbox"/> MCHLO1	HORNED LIZARD

# Quino Checkerspot Butterfly Protocol Survey — Field Data Sheet

Recorder: Erin Bergman Add'l Person: Margie Sitka Date: 5/3/11 GPS Unit: \_\_\_\_\_  
 Project: Concentrix Solar Project Map #: 7 and 1 Survey Sxn: \_\_\_\_\_ QCB Protocol Survey # 6 of 5

TIME (24-hour)	Temp (F°)	Wind (avg/max)	% CC	Sky				
Start				clear	patchy	overcast	drizzle	shower
9:00	75°	2-5	0	clear	patchy	overcast	drizzle	shower
11:30	78°	3-6	0	clear	patchy	overcast	drizzle	shower
12:00	80	2-4	0	clear	patchy	overcast	drizzle	shower
15:00	83	2-4	0	clear	patchy	overcast	drizzle	shower
				clear	patchy	overcast	drizzle	shower
End				clear	patchy	overcast	drizzle	shower

Habitat On-site (circle): open soils, hilltops, ridges, rock outcrops, soil crusts, clay soils, old roads, various nectar sources

		Total			Total
<b>Nymphalidae (Brushfooted Butterflies)</b>			<b>Hesperiidae (Skippers)</b>		
<i>Euphydryas editha</i> (Quino Checkerspot)			<i>Erynnis funeralis</i> (Funereal Duskywing)		
<i>Euphydryas chalcedona</i> (Henne's Checkerspot)			<i>Erynnis tristis</i> (Sad Duskywing)		
<i>Thessalia leanira</i> (Wright's Checkerspot)			<i>Erynnis propertius</i> (Propertius Duskywing)	1	1
<i>Chlosyne californica</i> (California Patch)			<i>Erynnis brizo</i> (Sleepy Duskywing)		
<i>Chlosyne gabbii</i> (Gabb's Checkerspot)			<i>Pyrgus albescens</i> (Checkered Skipper)		
<i>Phyciodes mylitta</i> (Mylitta Crescent)			<i>Hesperia juba</i> (Juba Skipper)	1	1
<i>Junonia coenia</i> (Common Buckeye)		17	<i>Polites sabuleti</i> (Sandhill Skipper)	1	3
<i>Vanessa annabella</i> (West Coast Lady)			<b>Megathymidae (Giant Skippers)</b>		
<i>Vanessa atalanta</i> (Red Admiral)			<i>Megathymus yuccae</i> (Yucca Giant Skipper)		
<i>Vanessa cardui</i> (Painted Lady)			<b>Other Butterflies:</b>		
<i>Vanessa virginiensis</i> (Virginia Lady)			<i>Square spotted blues</i>		4
<i>Nymphalis californica</i> (California Tortoiseshell)			<i>Euphydryas bettonida</i>		
<b>Danaidae (Milkweed Butterflies)</b>			<i>Bernardus</i>		
<i>Danaus plexippus</i> (Monarch)					
<i>Danaus gilippus</i> (Queen)					
<b>Satyridae (Satyrs)</b>					
<i>Coenonympha californica</i> (Common California Ringlet)					
<b>Pieridae (Whites, Sulphurs)</b>					
<i>Pieris rapae</i> (Cabbage White)					
<i>Pontia sisymbrii</i> (Spring White)					
<i>Pontia beckerii</i> (Baker's White)					
<i>Pontia protodice</i> (Common White)					
<i>Anthocharis sara</i> (Sara Orangetip)					
<i>Anthocharis cethura</i> (Felder's Orangetip)					
<i>Euchloe hyantis</i> (Desert Pearly Marble)					
<i>Colias eurytheme</i> (Orange Sulphur)		6			
<i>Colias harfordii</i> (Harford's Sulphur)					
<i>Nathalis iole</i> (Dainty Sulphur)					
<b>Papilionidae (Swallowtails)</b>			<b>Notes:</b>		
<i>Papilio polyxenes</i> (Desert Black Swallowtail)					
<i>Papilio eurymedon</i> (Pale swallowtail)					
<i>Papilio rutulus</i> (Western Tiger Swallowtail)					
<b>Riodiniade (Metalmarks)</b>					
<i>Apodemia mormo</i> (Behr's Metalmark)		24			
<b>Lycaenidae (Hairstreaks and Blues)</b>					
<i>Celastrina ladon</i> (Spring Azure)					
<i>Leptotes marina</i> (Marine Blue)					
<i>Brephidium exile</i> (Western Pygmy Blue)					
<i>Glaucopsyche lygdamus</i> (Southern Blue/Silvery blue)					
<i>Hemiarctus ceraunus</i> (Edward's Blue)					
<i>Icaria acmon</i> (Acmon Blue)		5			
<i>Philotes sonorensis</i> (Sonoran Blue)					
<i>Callophrys augustinus</i> (Brown Elfin)					
<i>Callophrys perplexa</i> (Perplexing Green Hairstreak)					
<i>Strymon melinus</i> (Gray Hairstreak)					
<i>Atides halesus</i> (Great Purple Hairstreak)					



# Essential Nectaring or Host Plants for Quino Checkerspot Butterfly in Boulevard, California (Concentrix Solar)

Instructions:

- ▶ Please Place a Check Mark Beside Flowering Plants. Use Numbered Notes to Add Species Detail.

**PLEASE RECORD HOST PLANTS ON GPS** See Codes Below:

*Antirrhinum coulterianum* = AC    *Collinsia concolor* = CC    *Cordylanthus rigidus* = CR    *Plantago patagonica* = PP

<input checked="" type="checkbox"/> <i>Amsinckia menziesii</i>	Rancher's Fiddleneck
<input type="checkbox"/> <i>Antirrhinum coulterianum</i>	Coulter's Snapdragon
<input type="checkbox"/> <i>Antirrhinum nuttallianum</i>	Nuttall's Snapdragon
<input type="checkbox"/> <i>Asclepias fascicularis</i>	Narrow-leaf Milkweed
<input checked="" type="checkbox"/> <i>Boechera</i> sp.	Rock Cress
<input type="checkbox"/> <i>Calandrinia ciliata</i>	Red Maids
<input type="checkbox"/> <i>Calochortus concolor</i>	Golden-bowl Mariposa Lily
<input type="checkbox"/> <i>Calystegia longipes</i>	Morning-glory
<input type="checkbox"/> <i>Camissonia</i> sp.	Sun Cup
<input type="checkbox"/> <i>Castilleja exerta</i>	Paintbrush
<input type="checkbox"/> <i>Caulanthus heterophyllus</i>	San Diego Jewelflower
<input type="checkbox"/> <i>Caulanthus simulans</i>	Payson's Caulanthus
<input type="checkbox"/> <i>Ceanothus cuneatus</i>	Buck Brush
<input checked="" type="checkbox"/> <i>Ceanothus greggii</i>	Cup-leaf-lilac
<input type="checkbox"/> <i>Ceanothus leucodermis</i>	Chaparral Whitethorn
<input type="checkbox"/> <i>Chaenactis artemisiifolia</i>	White Pincushion
<input checked="" type="checkbox"/> <i>Chaenactis glabriuscula</i>	Yellow Pincushion
<input checked="" type="checkbox"/> <i>Clematis</i> sp.	Clematis
<input checked="" type="checkbox"/> <i>Collinsia concolor</i>	Southern Chinese Houses
<input checked="" type="checkbox"/> <i>Cordylanthus rigidus</i>	Dark-tip Bird's Beak
<input checked="" type="checkbox"/> <i>Coreopsis californica</i>	California Coreopsis
<input type="checkbox"/> <i>Corethrogyne filaginifolia</i>	Common Sand-aster
<input checked="" type="checkbox"/> <i>Cryptantha</i> sp.	Cryptantha
<input type="checkbox"/> <i>Cucurbita foetidissima</i>	Calabazilla
<input checked="" type="checkbox"/> <i>Descurainia</i> sp.	Tansy-mustard
<input checked="" type="checkbox"/> <i>Dicentra chrysantha</i>	Golden Ear-drops
<input checked="" type="checkbox"/> <i>Dichelostemma capitatum</i>	Blue Dicks
<input checked="" type="checkbox"/> <i>Dudleya</i> sp.	Dudleya
<input checked="" type="checkbox"/> <i>Emmenanthe pendulifera</i>	Whispering Bells
<input type="checkbox"/> <i>Eriastrum</i> sp.	Woolly-star
<input checked="" type="checkbox"/> <i>Ericameria</i> sp.	Goldenbush
<input type="checkbox"/> <i>Erigeron foliosus</i>	Leafy Daisy
<input checked="" type="checkbox"/> <i>Eriodictyon trichocalyx</i>	Hairy Yerba Santa
<input checked="" type="checkbox"/> <i>Eriogonum fasciculatum</i>	Inland California Buckwheat
<input checked="" type="checkbox"/> <i>Eriogonum</i> sp.	Buckwheat
<input checked="" type="checkbox"/> <i>Eriophyllum</i> sp.	Golden-yarrow
<input checked="" type="checkbox"/> <i>Erodium cicutarium</i> *	Red-stem Storksbill
<input type="checkbox"/> <i>Erysimum capitatum</i>	Western Wallflower
<input checked="" type="checkbox"/> <i>Eschscholzia californica</i>	California Poppy
<input type="checkbox"/> <i>Eucrypta chrysanthemifolia</i>	Spotted Hideseed
<input type="checkbox"/> <i>Euthamia occidentalis</i>	Western Goldenrod
<input checked="" type="checkbox"/> <i>Garrya veatchii</i>	Canyon Silk Tassel
<input checked="" type="checkbox"/> <i>Gilia</i> sp.	Gilia
<input checked="" type="checkbox"/> <i>Gnaphalium</i>	Cudweed
<input type="checkbox"/> <i>Gutierrezia lasiophylla</i>	California Mustard
<input checked="" type="checkbox"/> <i>Gutierrezia sarothrae</i>	Broom Matchweed
<input type="checkbox"/> <i>Heliotropium curassavicum</i>	Salt Heliotrope
<input checked="" type="checkbox"/> <i>Hirschfeldia incana</i>	Short-pod Mustard
<input type="checkbox"/> <i>Lamium amplexicaule</i>	Henbit
<input checked="" type="checkbox"/> <i>Lasthenia gracilis</i>	Common Goldfields
<input checked="" type="checkbox"/> <i>Layia glandulosa</i>	White Layia
<input type="checkbox"/> <i>Lepidium</i> sp.	Pepperweed
<input checked="" type="checkbox"/> <i>Linanthus bellus</i>	Desert Beauty
<input type="checkbox"/> <i>Linanthus dichotomus</i>	Evening Snow
<input checked="" type="checkbox"/> <i>Lonicera subspicata</i>	Johnston's Honeysuckle
<input type="checkbox"/> <i>Malacothrix californica</i>	California Dandelion
<input type="checkbox"/> <i>Malacothrix clevelandii</i>	Cleveland's Malacothrix
<input type="checkbox"/> <i>Marah macrocarpus</i>	Wild-cucumber
<input checked="" type="checkbox"/> <i>Marrubium vulgare</i> *	Horehound
<input type="checkbox"/> <i>Matricaria matricarioides</i> *	Common Pineapple-weed
<input type="checkbox"/> <i>Mentzelia veatchiana</i>	Veatch's Stick-leak
<input type="checkbox"/> <i>Microsteris gracilis</i>	Slender Phlox
<input checked="" type="checkbox"/> <i>Mimulus</i> sp.	Monkeyflower
<input type="checkbox"/> <i>Nemophila menziesii</i>	Small-flower Baby Blue Eyes
<input type="checkbox"/> <i>Orobanche bulbosa</i>	Chaparral Broom-rape

<input type="checkbox"/> <i>Osmadenia tenella</i>	Osmadenia
<input type="checkbox"/> <i>Paeonia californica</i>	California Peony
<input checked="" type="checkbox"/> <i>Pectocarya</i> sp.	Pectocarya
<input checked="" type="checkbox"/> <i>Phacelia</i> sp. <i>distans</i>	Phacelia
<input checked="" type="checkbox"/> <i>Pholistoma membranaceum</i>	White Fiesta Flower
<input checked="" type="checkbox"/> <i>Plagiobothrys</i> sp.	Popcornflower
<input type="checkbox"/> <i>Plantago patagonica</i>	Desert Plantain
<input type="checkbox"/> <i>Platystemon californicus</i>	Cream Cups
<input type="checkbox"/> <i>Prunus ilicifolia</i>	Holly-leaf Cherry
<input checked="" type="checkbox"/> <i>Rafinesquia neomexicana</i>	Desert Chicory
<input checked="" type="checkbox"/> <i>Ribes quercetorum</i>	Oak Gooseberry
<input type="checkbox"/> <i>Rorippa nasturtium-aquaticum</i>	Water-cress
<input type="checkbox"/> <i>Rosa californica</i>	California Rose
<input type="checkbox"/> <i>Salpiglossis australis</i>	Southern Gilia
<input checked="" type="checkbox"/> <i>Senecio californicus</i>	California Butterweed
<input type="checkbox"/> <i>Senecio flaccidus</i>	Butterweed
<input type="checkbox"/> <i>Sidalcea malvaeflora</i>	Checker-bloom
<input checked="" type="checkbox"/> <i>Sisymbrium</i> sp.	Tumble Mustard
<input checked="" type="checkbox"/> <i>Solidago californica</i>	California Goldenrod
<input type="checkbox"/> <i>Stachys ajugoides</i>	Hedge-nettle
<input type="checkbox"/> <i>Stephanomeria</i> sp.	Wreathplant
<input checked="" type="checkbox"/> <i>Streptanthus campestris</i>	Southern Jewelflower
<input checked="" type="checkbox"/> <i>Stylocine gnaphalioides</i>	Everlasting Nest-straw
<input type="checkbox"/> <i>Tetradymia comosa</i>	Cotton-thorn
<input type="checkbox"/> <i>Thysanocarpus</i> sp.	Fringepod
<input checked="" type="checkbox"/> <i>Trichostema parishii</i>	Mountain Bluecurls
<input type="checkbox"/> <i>Tropidocarpum gracile</i>	Slender Doble-pod
<input type="checkbox"/> <i>Uropappus lindleyi</i>	Silver Puffs
<input type="checkbox"/> <i>Viola purpurea</i>	Oak Yellow Violet

## Other Flowering Plants:

## Rare Wildlife or Rare Plants:

EBAD01A1 SB1602B2  
 EBAD02A2  
 EBAD03A1  
 EBAD04A1  
 EBAD01  
 EBCC01A1  
 EBCC02B5  
 EBAD01A1  
 EBAD02B15  
 EBAD03A1  
 EBGR01A1  
 EB1601A1

**APPENDIX D**  
**POTENTIAL NECTARING SOURCES AND**  
**HOST PLANTS DETECTED**  
**DURING QUINO SURVEYS**

**Appendix D**  
**Potential Nectaring Sources and Host Plant Species**  
**Detected During Quino Surveys<sup>A</sup>**

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
<i>Amsinckia menziesii</i>	rancher's fiddleneck	x	x	x	x	x	x
<i>Boechera pulchra</i>	beautiful rock cress	x	x	x	x	x	x
<i>Calandrinia ciliata</i>	red maids			x	x	x	
<i>Calystegia longipes</i>	morning-glory				x	x	
<i>Camissonia</i> sp.	sun cup	x	x	x	x	x	x
<i>Castilleja subinclusa</i>	Indian paintbrush					x	
<i>Caulanthus affinis</i>	Indian paintbrush	x	x				
<i>Caulanthus heterophyllus</i>	San Diego jewelflower			x	x	x	
<i>Caulanthus simulans</i>	Payson's caulanthus	x					
<i>Ceanothus cuneatus</i>	buck brush	x	x		x		
<i>Ceanothus greggii</i>	cup-leaf lilac	x	x	x	x	x	x
<i>Ceanothus leucodermis</i>	chaparral whitethorn		x	x			
<i>Chaenactis glabriuscula</i>	yellow pincushion						x
<i>Clematis</i> sp.	clematis	x		x		x	x
<b><i>Collinsia concolor</i></b>	<b>southern Chinese houses<sup>B</sup></b>		x			x	x
<b><i>Cordylanthus rigidus</i></b>	<b>dark-tip bird's beak</b>			x			
<i>Coreopsis californica</i>	California coreopsis	x	x	x	x	x	x
<i>Corethrogyne filaginifolia</i>	common sand-aster						x
<i>Cryptantha</i> sp.	cryptantha	x	x	x	x	x	x
<i>Descurainia</i> sp.	tansy-mustard	x	x	x	x	x	x
<i>Dichelostemma capitatum</i>	blue dicks		x			x	x
<i>Dudleya</i> sp.	dudleya						x
<i>Emmenanthe pendulifera</i>	whispering bells			x			x
<i>Eriastrum</i> sp.	woolly-stars		x	x			x
<i>Ericameria</i> sp.	goldenbush	x	x	x	x	x	x
<i>Erigeron foliosus</i>	leafy daisy						x
<i>Eriodictyon trichocalyx</i>	hairy yerba santa			x			x
<i>Eriogonum fasciculatum</i>	inland California buckwheat		x	x		x	x
<i>Eriogonum</i> sp.	buckwheat				x	x	x
<i>Eriogonum wrightii</i>	bastardsage			x			
<i>Eriophyllum confertiflorum</i>	golden-yarrow		x	x	x	x	x
<i>Erodium cicutarium</i>	red-stem storksbill	x	x	x	x	x	x
<i>Erysimum capitatum</i>	western wallflower					x	
<i>Eschscholzia californica</i>	California poppy	x	x	x	x	x	x
<i>Eucrypta chrysanthemifolia</i>	spotted hideseed	x		x			
<i>Garrya veatchii</i>	canyon silk tassel	x	x	x	x		x
<i>Gilia</i> sp.	gilia			x	x	x	x
<i>Gnaphalium</i> sp.	cudweed						x
<i>Guillenia lasiophylla</i>	California mustard	x				x	
<i>Gutierrezia sarothrae</i>	broom matchweed			x	x	x	x
<i>Heliotropium curassavicum</i>	salt heliotrope				x	x	
<i>Hirshfeldia incana</i>	short-pod mustard	x	x	x	x	x	x
<i>Lasthenia gracilis</i>	common goldfields	x	x	x	x	x	x
<i>Layia glandulosa</i>	white layia	x	x	x	x	x	x
<i>Lepidium</i> sp.	pepperweed			x	x	x	x
<i>Linanthus bellus</i>	desert beauty	x	x	x	x	x	x
<i>Lupinus bicolor</i>	miniature lupine					x	
<i>Lupinus concinnus</i>	bajada lupine			x		x	
<i>Linanthus dichotomus</i>	evening snow				x	x	
<i>Lonicera subspicata</i>	Johnston's honeysuckle			x			x
<i>Malacothrix californica</i>	California dandelion			x		x	x
<i>Marah macrocarpus</i>	wild-cucumber					x	

Scientific Name	Common Name	Survey Week					
		1	2	3	4	5	6
<i>Marrubium vulgare</i>	horehound						x
<i>Matricaria matricarioides</i>	common pineapple-weed	x					
<i>Mentzelia veatchiana</i>	Veatch's stick-leak						x
<i>Nemophila menzeisii</i>	small-flower baby blue eyes	x	x	x		x	
<i>Orobancha bulbosa</i>	chaparral broom-rape						x
<i>Osmadenia tenella</i>	osmadenia				x		
<i>Paeonia californica</i>	California peony		x				
<i>Pectocarya</i> sp.	pectocarya	x	x	x	x	x	x
<i>Phacelia</i> sp.	phacelia	x	x	x	x	x	x
<i>Phacelia distans</i>	distant phacelia			x			
<i>Pholistoma membranaceum</i>	white fiesta flower						x
<i>Plagiobothrys</i> sp.	popcornflower	x	x	x	x	x	x
<i>Rhus ovata</i>	sugar bush		x	x	x	x	x
<i>Rhus trilobata</i>	skunkbush sumac	x					
<i>Platystemon californicus</i>	cream cups			x	x	x	
<i>Prunus ilicifolia</i>	holly-leaf cherry		x	x			
<i>Ribes quercetorum</i>	oak gooseberry			x			x
<i>Senecio californicus</i>	California butterweed	x	x	x	x	x	x
<i>Sisymbrium</i> sp.	tumble mustard	x	x	x	x	x	x
<i>Solidago californica</i>	California goldenrod					x	x
<i>Streptanthus campestris</i>	southern jewelflower			x		x	
<i>Stylocline gnaphalioides</i>	everlasting nest-straw		x	x	x	x	x
<i>Thysanocarpus</i> sp.	fringe-pod	x		x			x
<i>Trichostemma parishii</i>	mountain bluecurls		x			x	x
<i>Uropappus lindleyi</i>	silver puffs		x	x	x		x

<sup>A</sup> The Quino survey area (within the LanEast project site) was initially part of a larger survey area that was separated into three separate CPV projects (LanWest Solar Farm, LanEast Solar Farm, and Rugged Solar Farm) after the completion of protocol Quino checkerspot butterfly (*Euphydryas editha quino*) surveys. LanWest Solar Farm is located adjacent to the proposed project (on the western boundary of LanEast). Rugged Solar Farm is located directly north of Interstate 8. All three project sites were surveyed at the same time for Quino and, therefore, the weekly potential nectaring and host plant species detected list is the same for all three project sites.

<sup>B</sup> This host plant was only found on Rugged Solar.

**Bold** = potential Quino larval host plant species.

**APPENDIX E**  
**VERTEBRATE WILDLIFE SPECIES DETECTED**  
**DURING QUINO SURVEYS**



## Appendix E

### Vertebrate Wildlife Species Detected During Quino Surveys<sup>A</sup>

Scientific Name		Common Name
<b>REPTILES</b>		
<b>Order Squamata</b>		<b>Lizards and Snakes</b>
	Family Phrynosomatidae	
	<i>Phrynosoma coronatum blainvillii</i> <sup>B</sup>	coast horned lizard <sup>B</sup>
	Family Teiidae	
	<i>Cnemidophorus tigris</i> <sup>C</sup>	coastal whiptail <sup>C</sup>
<b>BIRDS</b>		
<b>Order Ciconiiformes</b>		<b>Herons, Storks, Ibises, and Relatives</b>
	Family Ardeidae	
	<i>Butorides virescens</i>	green heron
	Family Cathartidae	
	<i>Cathartes aura</i>	turkey vulture
<b>Order Falconiformes</b>		<b>Diurnal Birds of Prey</b>
	Family Accipitridae	
	<i>Buteo jamaicensis</i>	red-tailed hawk
<b>Order Galliformes</b>		<b>Magapodes, Curassows, Pheasants, and Relatives</b>
	Family Odontophoridae	
	<i>Callipepla californica</i>	California quail
<b>Order Charadriiformes</b>		<b>Shorebirds, Gulls, and Relatives</b>
	Family Charadriidae	
	<i>Charadrius vociferus</i>	killdeer
<b>Order Columbiformes</b>		<b>Pigeons and Doves</b>
	Family Columbidae	
	<i>Zenaida macroura</i>	mourning dove
	<i>Streptopelia decaocto</i>	Eurasian collared-dove
<b>Order Piciformes</b>		<b>Woodpeckers</b>
	Family Picidae	
	<i>Melanerpes formicivorus</i>	acorn woodpecker
	<i>Colaptes auratus</i>	northern flicker
<b>Order Passeriformes</b>		<b>Song birds</b>
	Family Tyrannidae	
	<i>Sayornis saya</i>	Say's phoebe
	<i>Tyrannus verticalis</i>	western kingbird
	Family Corvidae	
	<i>Corvus corax</i>	common raven
	<i>Aphelocoma californica</i>	western scrub jay
	Family Paridae	
	<i>Baeolophus inornatus</i>	oak titmouse
	Family Hirundinidae	
	<i>Petrochelidon pyrrhonota</i>	cliff swallow
	<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow
	Family Aegithalidae	
	<i>Psaltiriparus minimus</i>	bushtit
	Family Troglodytidae	
	<i>Thryomanes bewickii</i>	Bewick's wren
	<i>Troglodytes aedon</i>	house wren
	Family Sylviidae	
	<i>Polioptila caerulea obscura</i>	blue-gray gnatcatcher
	Family Turdidae	
	<i>Sialia mexicana</i>	western bluebird
	Family Timaliidae	
	<i>Chamaea fasciata</i>	wrentit

Scientific Name		Common Name
	Family Regulidae	
	<i>Regulus calendula</i>	ruby-crowned kinglet
	Family Mimidae	
	<i>Mimus polyglottos</i>	northern mockingbird
	Family Sturnidae	
	<i>Sturnus vulgaris</i>	European starling
	Family Parulidae	
	<i>Dendroica coronata</i>	yellow-rumped warbler
	<i>Vermivora ruficapilla</i>	Nashville warbler
	<i>Vermivora celata</i>	orange-crowned warbler
	<i>Dendroica petechia</i> <sup>B</sup>	yellow warbler <sup>B</sup>
	Family Emberizidae	
	<i>Amphispiza bilineata</i>	black-throated sparrow
	<i>Spizella breweri</i>	Brewer's sparrow
	<i>Pipilo crissalis</i>	California towhee
	<i>Pipilo maculatus</i>	spotted towhee
	<i>Junco hyemalis</i>	dark-eyed junco
	<i>Chondestes grammacus</i>	lark sparrow
	<i>Zonotrichia leucophrys</i>	white-crowned sparrow
	Family Icteridae	
	<i>Euphagus cyanocephalus</i>	Brewer's blackbird
	<i>Agelaius tricolor</i> <sup>B</sup>	Tricolored blackbird <sup>B</sup>
	<i>Icterus bullockii</i>	Bullock's oriole
	Family Fringillidae	
	<i>Carpodacus mexicanus</i>	house finch
<b>MAMMALS</b>		
<b>Order Lagomorpha</b>		<b>Rabbits, Hares, and Pikas</b>
	Family Leporidae	
	<i>Sylvilagus audubonii</i>	Audubon's cottontail
	<i>Lepus californica bennettii</i> <sup>B</sup>	San Diego black-tailed jackrabbit <sup>B</sup>

<sup>A</sup> The Quino survey area (within the LanEast project site) was initially part of a larger survey area that was separated into three separate CPV projects (LanWest Solar Farm, LanEast Solar Farm, and Rugged Solar Farm) after the completion of protocol Quino checkerspot butterfly (*Euphydryas editha quino*) surveys. LanWest Solar Farm is located adjacent to the proposed project (on the western boundary of LanEast). Rugged Solar Farm is located directly north of Interstate 8. All three sites were surveyed for Quino at the same time. This list of vertebrate wildlife species detected represents species detected for both the LanWest and LanEast projects (but does not include observations from the Rugged Solar site).

<sup>B</sup> State species of special concern (State of California 2011)

<sup>C</sup> State special animal (State of California 2011)